SUSTAINABLE CONSUMPTION AND THE LAW

BY
JAMES SALZMAN*

Until recently, environmental laws have focused on the reduction of pollution and waste. These laws have largely ignored the ultimate cause of that pollution and waste—the unsustainable consumption of goods and resources. However, at the 1992 Earth Summit the international community acknowledged the necessity of achieving levels of sustainable consumption in order to stop the continuing degradation of the global environment. This Article explores the limited role that sustainable consumption has played in environmental law to date. The Article then turns to the potential expansion of this

* Assistant Professor, Washington College of Law at the American University. The Author wishes to thank Perry Wallace, Jamie Boyle, Danny Bradlow, Robert Hahn, Marilyn Cohen-Yakowitz, Steve Porter, Jim McCarthy, Mike Jacobs, Andy Popper, Paul Ehrlich, and Gretchen Daily for their helpful comments, Stacia Baker and Karen Graziano for their research assistance, and the Washington College of Law for a summer research grant. The Author is grateful for comments following presentations at Stanford, the Universities of California at Berkeley (Boalt Hall) and at Davis, and Northwestern School of Law of Lewis & Clark College. This Article is dedicated to the memory of Harvey Yakowitz and Kathy Bishop.

role through the adoption of legal initiatives requiring producers of goods to take responsibility for the environmental impacts of the product throughout its entire lifecycle.

I. INTRODUCTION

Over a quarter century has passed since the Clean Air Act of 1970[1] ushered in the era of modern environmental law, establishing for the first time tough, nationally uniform command-and-control requirements.[2] From today's vantage point, the major environmental statutes passed in the 1970s such as the Clean Water Act[3] and the Resource Conservation and Recovery Act[4] have been largely successful. Overall, the air is purer, the water is cleaner.[5] Despite this progress, however, public opinion polls consistently show a general perception that the threats facing the environment are *more* serious today than in 1970.[6] The question is why? Where have our environmental laws fallen short?

Clearly, one problem is the inadequacy of domestic laws in the face of international environmental threats. The local identification of our environmental problems in 1970 was, in retrospect, parochial. An equally important problem, however, is that our vision of environmental law has been constricted. By narrowly focusing on basic pollution issues such as the production and disposal of waste, our laws have largely ignored other significant contributors to environmental harms. Chief among these contributors, and the focus of this article, is consumption.

With few exceptions, our modern environmental laws have been pollution control laws. As a result, our factories are now cleaner and more

---

[1] Clean Air Act (CAA), 42 U.S.C. §§ 7401-7671q (1994).

[2] For references to the modern era of environmental law, see Charles Wilkinson, *Mountains Without Handrails: Reflections on the National Parks*, 12 ENVTL. L. 523, 529 (1982) (*reviewing* JOSEPH L. SAX, MOUNTAINS WITHOUT HANDRAILS (1980)); E. Donald Elliot, *Environmental TQM: Anatomy of a Pollution Control Program that Works*, 92 MICH. L. REV. 1840, 1844 (1994).

[3] Federal Water Pollution Control Act (Clean Water Act (CWA)), 33 U.S.C. §§ 1251-1387 (1994).

[4] Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901-6992k (1994).

[5] From 1970 to 1994, despite a significant increase in industrial activity, emissions of carbon monoxide declined by 23%, volatile organic compounds by 24%, sulfur dioxide by 32% and lead by 98%. EPA, NATIONAL AIR POLLUTANT EMISSION TRENDS 1900-1994, at ES-9 (1995). Dumping raw sewage in rivers, lakes, and streams has been eliminated, and bodies of water which were previously flammable (the Cuyahoga River in Ohio) or ecologically close to death (Lake Erie) are flourishing. *See* Bill Gilbert, *Earth Day Plus 20, And Counting*, SMITHSONIAN, Apr. 1990, at 46, *available in* LEXIS, News Library, Smthsn File.

[6] William Reilly, Former Administrator of the Environmental Protection Agency (EPA), declared in 1991 that "[p]olls show [Americans] think the environment is getting worse. It is something that bothers me. It's extremely important the public understands the value we got for the amount of expenditures paid in the last twenty years. We did, in fact, achieve many goals we set for ourselves." Casey Burko, *Americans Growing Greener; Focus on Preventing Pollution*, THE RECORD, Nov. 29, 1991, at A25, *available in* LEXIS, News Library, Njrec File.

efficient, producing less pollution per unit of production.[7] This is surely an important achievement, but its significance is diminished by the fact that we are all consuming more, resulting in accelerated use of natural resources and associated impacts both at home and abroad.[8] Indeed, more goods and services have been consumed since 1950 than by all previous generations combined.[9] The manufacture of cars, for example, produces less pollution than twenty years ago, but the far greater number of cars on the road has led to major increases in resource consumption.[10] Put simply, in concentrating our laws on the reduction of waste from pipes and smokestacks, we have largely neglected to address the *reason* we produce the waste in the first place.

This is a serious failing, for stringent regulation of polluting industries will *not* ensure environmental protection if current trends of consumption continue over the longer term.[11] As Gro Harlem Brundtland, former Prime

---

[7] Data from the Toxic Release Inventory shows significant reductions in emissions in just the last five years despite increasing production. *See, e.g.*, Johnathan Scott, *All Memphians Can Breathe a Lot Easier Because of Pollution Control*, MEMPHIS BUS. J., Sept. 30, 1996, at 38, *available in* 1996 WL 11169129.

[8] The dramatic increase in consumption since mid-century has contributed to the degradation of vital renewable resources such as topsoil, fresh water, and biodiversity. *See* Gretchen C. Daily & Paul R. Ehrlich, *Population, Sustainability, and Earth's Carrying Capacity*, 42 BIOSCIENCE 761, 764 (1992) [hereinafter Daily & Ehrlich]; *see also* Sandra L. Postel et al., *Human Appropriation of Renewable Fresh Water*, 271 SCIENCE 785, 785 (1996) (assessing status and degradation of fresh water resources); Gretchen C. Daily, *Restoring Value to the World's Degraded Lands*, 269 SCIENCE 350, 351 (1995) (concluding that 43% of Earth's terrestrial vegetated surface suffers from soil degradation).

[9] Since 1950, per capita consumption of copper, steel, energy, timber, and meat has doubled; consumption of plastic has increased five-fold and aluminum by seven-fold. While America has the highest per capita consumption levels in the world, the resource consumption in Western Europe and Japan is only slightly less. ALAN DURNING, HOW MUCH IS ENOUGH? 29, 38 (1992).

[10] Since the 1950s, the number of cars on American roads has risen from 60 million to approximately 180 million. Bill Hendrich, *SMART CARS Radar Technology Will Warn Drivers of Road Hazards*, ATLANTA J. & CONSTITUTION, Aug. 17, 1996, *available in* 1996 WL 8226776. As a country, the U.S. consumes 40% of the world's gasoline. Pamela Cohn, *Automobile Pollution: Japan and the US—Cooperation or Competition?*, 9 EMORY INT'L L. REV. 179, 181 (1995). In the United States, cars consume roughly 70% of the lead, 60% of the rubber, 15% of the aluminum, and 13% of the steel produced annually. Amory B. Lovins & L. Hunter Lovins, *Reinventing the Wheels (Partnership for a New Generation of Vehicles Redesign Project)*, ATLANTIC MONTHLY, Jan. 1995, *available in* 1995 WL 12088691.

[11] Following the Earth Summit, an international conference hosted by the United Nations and the Organisation for Economic Co-Operation and Development (OECD) concluded that "[c]urrent material flows induce pollution, resource depletion, energy consumption and biodiversity and landscape destruction . . . [which] appear unsustainable by any standard." Summary of Issues Raised at the Symposium on Sustainable Consumption, at 10 (Jan. 19-20, 1994, Oslo, Norway) (on file with author).

This fact has particular relevance for Americans, the world's largest per capita consumers of resources. DURNING, *supra* note 9, at 38. Indeed, the President's Council on Sustainable Development (PCSD), a non-partisan advisory panel created by President Clinton, concluded that "based on current trends, efficiency in the use of all resources would have to increase by more than 50 percent over the next four or five decades just to keep pace with population growth." THE PRESIDENT'S COUNCIL ON SUSTAINABLE DEVELOPMENT, SUSTAINABLE

Minister of Norway and chair of the commission that produced the seminal work, *Our Common Future*, has stated:

> It is simply impossible for the world as a whole to sustain a Western level of consumption for all. In fact, if seven billion people were to consume as much energy and resources as we do in the West today we would need ten worlds, not one to satisfy all our needs.[12]

The international community has recognized the importance of consumption in environmental protection, declaring at the 1992 Earth Summit that, "[t]he major cause of the continued deterioration of the global environmental degradation is the unsustainable pattern of consumption and production, particularly in the industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances . . . . Developed countries should take the lead in achieving sustainable consumption patterns . . . ."[13]

The clear implication of this statement, endorsed by 178 countries and repeated in subsequent international declarations, is that over the longer term we in the developed world must consume less, consume better, or both. This general goal has been described as "Sustainable Consumption." The key challenge is how to translate this goal into effective practice. Indeed, what *level* of consumption is sustainable? What does consuming *better* actually mean? And, the focus of this Article, what role does and should the *law* play in influencing our patterns and levels of consumption?

The term, "sustainable consumption," as used in this Article, refers to a level of consumption which causes a level of environmental impact over time that does not degrade basic ecosystem services, such as the provision of fresh water, fertile soil, and a protective ozone layer.[14] Determining

---

AMERICA: A NEW CONSENSUS FOR PROSPERITY, OPPORTUNITY, AND A HEALTHY ENVIRONMENT FOR THE FUTURE 143 (1996) [hereinafter SUSTAINABLE AMERICA].

[12] Gro Harlem Brundtland, Oslo Symposium on Sustainable Consumption (Oslo, Norway, Jan. 19-20, 1994), *quoted in* NICK ROBINS & SARAH ROBERTS, RETHINKING PAPER CONSUMPTION 8 (Norwegian Ministry of Environment, commissioned by OECD Work Programme on Sustainable Production and Consumption, 1996). The earth's population is expected to exceed seven billion people in less than twenty years. *World's Population Will Grow by 1 Billion in 1990s*, BUS. AM., Nov. 5, 1990, *available in* LEXIS, News Library, Busamr File.

[13] REPORT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT, Vol. I, at 37, 38, U.N. Doc. A/Conf.151.26 (1992); *see also* Istanbul Declaration on Human Settlements, *in* UNITED NATIONS, HABITAT AGENDA AND ISTANBUL DECLARATION, SECOND UNITED NATIONS CONFERENCE ON HUMAN SETTLEMENTS, ISTANBUL, TURKEY, June 3-14, 1996, ¶ 10; Programme of Action of the International Conference on Population and Development, U.N. Doc. A/CONF.171/13/Annex at 9, 15 (1994) (visited Nov. 17,1997) <gopher://gopher.undp.org:70/00/ungophers/popin/icpd/conference/offeng/poa.txt>.

[14] *See* James Salzman, *Valuing Ecosystem Services*, 24 ECOLOGY L.Q. (forthcoming 1998); NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS (Gretchen C. Daily ed., 1997). A common misconception is that the greatest threat posed by overconsumption is that we will "run out" of things such as oil, food, or copper. This was a basic message of LIMITS TO GROWTH. DONNELLA H. MEADOWS ET AL., THE LIMITS TO GROWTH: A REPORT FOR THE CLUB OF ROME'S PROJECT ON THE PREDICAMENT OF MANKIND (1972). While scarcity may be a real threat for fisheries and old growth forests, one needs to be careful in making projections based on current patterns because there is a strong historical record of substitutions

whether a sustainable level of consumption requires a two-fold, twenty-fold, or fifty-fold increase in efficiencies or some other measure is beyond the scope of this Article. In practical terms, moreover, such a debate over the precise quantitative definition is unnecessary. As Agenda 21 concluded, such a debate over the precise quantitative definition is unnecessary. As part II of this Article demonstrates, there is a global consensus among governments that *current* impacts of consumption are not sustainable.[15] Thus, *at a minimum*, achieving a sustainable level of consumption

---

as a response to market pressures. Hence, when elephant ivory became scarce in the late 19th century, cellulose technologies were developed to produce pool balls. *Weekend Edition—Saturday: Plastic—The Dominant Material of Our Times* (National Public Radio broadcast, Aug. 10, 1996), *available in* 1996 WL 7992907. Moreover, technological developments such as the Green Revolution in agriculture and advances in mineral extraction have increased the production and accessibility of previously scarce resources. *See generally* Terence J. Sorg, Comment, *Global Hunger, A Doubling Population, and Environmental Degradation: Justifying Radical Changes in U.S. Farm Policy*, 6 IND. INT'L & COMP. L. REV. 679, 690-91 (1996) (discussing the negative environmental consequences of the Green Revolution).

Rather than scarcity of natural resources, the greater problem is scarcity of ecosystem services such as water purification, climate moderation, renewal of soil fertility, biodiversity, and pollination. These services, taken for granted yet absolutely essential to human existence, have no viable substitutions and are under direct threat from the environmental impacts of current consumption patterns and levels.

There are a number of quantitative measurements which attempt to determine sustainable levels of consumption. The measurement of "Ecological Footprints," identifies the amount of land required to support a community's consumption demands for food, forest products, and fossil fuels. The measurement of "carrying capacity" defines the maximum population that can be supported sustainably by a habitat. Susan L. Smith, *Ecologically Sustainable Development: Integrating Economics, Ecology, and Law*, 31 WILLAMETTE L. REV. 261, 279-81 (1995). This concept underpins sustainable development, but there is no accepted measure of the earth's carrying capacity. One study, for example, estimates that 1.5 to 2 billion people could live sustainably at the standard of Sweden or France today, less than half today's global population. Robert Hurwitt, *Visions, Gretchen Daily*, MOTHER JONES, Nov.-Dec. 1994, at 21, *available at* 1994 WL 12802205.

"Ecospace" is the area needed to regenerate resources and absorb wastes. *See generally* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, FINAL REPORT, OECD WORKSHOP ON SUSTAINABLE CONSUMPTION AND PRODUCTION A16-A18 (1995) (discussing the concept of Ecospace and its usefulness in the sustainable consumption arena). As resource consumption increases and the ability to absorb the corresponding waste decreases, more ecospace is needed. Promoted by Hans Opschoor of the Dutch chapter of Friends of the Earth, Ecospace is determined not by levels of consumption but, rather, by its impacts. *Id.* at A16. As a common resource held in trust, Ecospace must be equitably shared among all nations. These methodologies are useful in understanding a country's levels of consumption but give little guidance at the individual level.

[15] As a scientific review concluded in 1992:

> The current [global] population of 5.5 billion is being maintained only through the exhaustion and dispersion of a one-time inheritance of natural capital, including topsoil, groundwater, and biodiversity. The rapid depletion of these essential resources, coupled with a worldwide degradation of land and atmospheric quality, indicate that the human enterprise has not only exceeded its current social carrying capacity, but it is actually reducing future potential biophysical carrying capacities by depleting essential natural capital stocks.

Daily & Ehrlich, *supra* note 8, at 762-63 (citations omitted); *see also* Sandra L. Postel et al., *Human Appropriation of Renewable Fresh Water*, 271 SCIENCE 785, 785-88 (1996), *available*

will require stabilizing environmental impacts at current levels. This is no easy task, for virtually all trends show that total levels of global consumption are increasing.[16]

In response to the challenges set forth at the Earth Summit, sustainable consumption has been placed at the top of the agenda by the United Nation's Commission on Sustainable Development and the Organisation for Economic Co-operation and Development (OECD).[17] Surprisingly, while issues of pollution and population have been debated and studied at length by legal scholars, and deservedly so, the law's influence on consumption has received remarkably little attention. Indeed, no law review article has ever been written directly on the subject.[18]

This Article lays an intellectual foundation for examination of these issues by analyzing the historic, economic, and policy issues linking sustainable consumption and environmental law. From this base, it builds an analytical framework to assess and identify meaningful future roles for the law to play in moving toward the goal of sustainable consumption.

Part II discusses the origins of sustainable consumption, from Malthus to the Earth Summit, and explains why it has been largely ignored by modern environmental law. An ecological model is used to explore the interdependencies of population, technology, and consumption. Part III examines the market failures of inaccurate pricing and information which hinder environmentally-responsible consumption, and explains why these inaccuracies make legal intervention in the market appropriate. Using consumer products as an archetype, Part IV reviews the law's current treatment of consumption issues through three analytical categories in order to demonstrate that the law, though effective in addressing patterns of consumption such as product technology, does little to influence levels of consumption. As a result, current legal approaches have proven inade-

---

in LEXIS, BNA Library, News File (assessing status and degradation of fresh water resources); Gretchen Daily, *Restoring Value to the World's Degraded Lands*, 269 SCIENCE 350, 351 (1995), *available in* LEXIS, BNA Library, News File (concluding that 43% of Earth's terrestrial vegetated surface suffers from soil degradation).

[16] *See supra* notes 8, 9, 15 and accompanying text; *infra* note 114 and accompanying text.

[17] *See Commission on Sustainable Development*, 4th Sess., Supp. No. 8 at 2, U.N. Doc. E/CN.17/1996/5 (1996) [hereinafter *Commission on Sustainable Development*]. In addition to its work program, the OECD has co-sponsored international conferences on sustainable consumption in Norway, the Netherlands, the United States, Germany, and South Korea. ROBINS & ROBERTS, *supra* note 12, at 9 n.1.

[18] The only articles which discuss sustainable consumption do so in passing and are concerned with general policy issues. *See, e.g.*, Joel S. Hirschhorn, *Pollution Prevention Comes of Age*, 29 GA. L. REV. 325, 346-47 (1995). For mention of sustainable consumption as part of Agenda 21, see Nicholas A. Robinson, *"Colloquium: The Rio Environmental Law Treaties" IUCN's Proposed Covenant on Environment & Development*, 13 PACE ENVTL. L. REV. 133 (1995). For a discussion of consumption issues in the context of consumer information, see Peter Menell, *Structuring a Market-Oriented Federal Eco-Information Policy*, 54 MD. L. REV. 1435 (1995). For a discussion of the consumption-population debate, see Judith Jacobsen, *Population, Consumption and Environmental Degradation: Problems and Solution*, 6 COLO. J. INT'L ENVTL. L. & POL'Y 255 (1995).

quate to move meaningfully toward more environmentally-responsible consumption.

Part V moves from theory to practice and examines a powerful new environmental policy instrument which promotes sustainable consumption called, "Extended Producer Responsibility" (EPR).[19] EPR expands the responsibility of actors to reduce products' environmental impacts *throughout* the lifecycle. This approach is a significant departure from traditional environmental protection strategies and forces the creation of new institutional partnerships. EPR's most aggressive implementation has been in the European Union (EU), where producers effectively are required to take responsibility for their product packaging upon disposal.[20] Today, EPR laws are eagerly being adopted around the world with profound consequences for product design and consumption patterns.[21]

Although this transformation has not been addressed by legal scholars, it could have dramatic implications. Indeed, if the trend continues, the market for many consumer products will be transformed into a *leasing* economy, with manufacturers mandated to recover and manage products at the end of their useful lives. Part VI explores EPR's strengths and weaknesses as policy, assesses the broader legal issues EPR raises, and considers the likelihood of adopting EPR and other sustainable consumption laws in the United States.

II. ORIGINS OF SUSTAINABLE CONSUMPTION

A. From Malthus to Rio

The issues surrounding consumption are enormously broad. Even the most austere human society necessarily consumes food, water, energy, land, and minerals, and each act of consumption has environmental consequences. As a result, the importance of maintaining levels of consumption within an environment's carrying capacity or natural limits to growth has long been recognized. The intellectual basis of this proposition was clearly laid out in eighteenth-century England by Thomas Malthus in his *Essay On the Principle of Population*.[22] Its modern foundations were established in the late 1960s and early 1970s by a series of books including Schumacher's *Small is Beautiful*,[23] the Club of Rome's report *Limits to*

---

[19] EPR is known in the United States as "Extended Product Responsibility." Remarks of Bette Fishbein, President's Commission on Sustainable Development Workshop on EPR, Washington, D.C. (Oct. 21, 1996) [hereinafter Remarks of Bette Fishbein]. Currently, 18 of the 25 OECD countries have enacted national EPR laws. *Id.* As this Article was being finalized, a Lexis-Nexis search revealed no American law review articles mentioning Extended Product Responsibility or Extended Producer Responsibility. Lexis Search, Oct. 28, 1997.

[20] *See infra* Part V.

[21] Remarks of Bette Fishbein, *supra* note 19.

[22] THOMAS R. MALTHUS, ESSAY ON THE PRINCIPLE OF POPULATION; OR A VIEW OF ITS PAST AND PRESENT EFFECTS ON HUMAN HAPPINESS (A.M. Kelley ed., 7th ed. 1971) (1798) (concluding that unless population growth is regulated, resources will become scarce leading to widespread famine and poverty).

[23] E.F. SCHUMACHER, SMALL IS BEAUTIFUL: ECONOMICS AS IF PEOPLE MATTERED (1973).

Growth,[24] Ehrlich's "neo-Malthusian" warning in *The Population Bomb*,[25] and Commoner's *The Closing Circle*.[26] All of these works documented an inevitable confrontation between ever-expanding material demands and increasingly depleted finite resources, between growing pollution and the weakening ability of ecosystems to assimilate waste. At a basic level the messages challenged popular ideals of growth calling, for example, for simpler, local-based economies (Schumacher), population control (Ehrlich), and reduced consumption (Club of Rome).

The relationship between consumption and a population's overall environmental impact is complex. An ecological model developed in the 1970s, known as the *I=PAT* model, describes interdependencies well.[27] Expressed as a formula, *I=PAT*, the model describes a community's overall environmental impact (*I*) as the product of its population size (*P*), its affluence or per capita level of consumption (*A*), and its technology or environmental impact per unit of consumption (*T*).[28] In simple terms, Schumacher focused primarily on patterns of consumption (*T*), the Club of Rome on levels of consumption (*A*), and Ehrlich on population size (*P*). Importantly, all three variables are dependent. For example, a population's density and affluence will influence its choices of transportation and land management.

The consequences of the *I=PAT* model are significant, for they suggest not only that lessening environmental impact depends upon both population *and* consumption, but that the location *where* population and consumption are reduced is critically important. In regard to the environmental impacts of commercial energy consumption, for example, the average African family would need to bear more than ninety children to equal the impact of an American couple with only two children.[29]

The scientific measure of "Ecological Footprints" illustrates the problem on a spatial scale. The Ecological Footprint is a calculation of the land needed to provide resources to satisfy a population's consumption needs.[30] To provide its energy, food, and forestry needs, for example, the Netherlands requires a footprint over seventeen times its size.[31] Hence,

---

[24] *See* MEADOWS ET AL., *supra* note 14.

[25] PAUL EHRLICH, THE POPULATION BOMB (1968).

[26] BARRY COMMONER, THE CLOSING CIRCLE: NATURE MAN AND TECHNOLOGY (1971).

[27] Daily & Ehrlich, *supra* note 8, at 762.

[28] The *I=PAT* model was developed by Paul Ehrlich and John Holdren. *Id.*

[29] *See* Jacobsen, *supra* note 18, at 270. Perhaps surprisingly, the *I=PAT* model also relates to the recent immigration debate in the United States. When the average immigrant from a developing country settles in the United States, his or her total environmental impact rises significantly (for the simple reason that an average American's environmental impact is the highest of any citizen in the world.) If one's primary concern is to reduce the total environmental impact on the biosphere, the *I=PAT* formula would counsel tightening immigration into the United States. Clearly, immigration policy is a highly controversial area and national environmental groups have intentionally avoided the issue. With the *I=PAT* model in mind, however, it is worthwhile considering the appropriate "environmentalist" position on immigration. *See also* Daily & Ehrlich, *supra* note 8.

[30] *See* Hurwitt, *supra* note 14, at 21.

[31] *Id.*

the Netherlands would need the land and resources of seventeen countries just like it to provide for its consumption demands. In simple physical terms, this indicates that the earth cannot sustain the present 5.9 billion people consuming at current developed country levels, much less the 8.4 billion people projected to be inhabiting the earth by 2025.[32]

It was not until the Earth Summit in 1992, however, that the international community first explicitly acknowledged the implications of natural limits to society's growth. Indeed, the Earth Summit's basic principle, sustainable development, expressly conditions today's development on the ability to meet the needs of future generations.[33] The blueprint to achieve sustainable development is contained in the consensus strategy adopted at the Earth Summit, known as Agenda 21,[34] which represents the most important international environmental law on sustainable consumption ever adopted.[35]

B. Chapter IV of Agenda 21

Entitled "Changing Consumption Patterns," Chapter IV of Agenda 21 declares at the outset that "the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialised countries."[36] Contrasting the inability of poorer countries to meet basic needs of food and shelter, Chapter IV indicts the "excessive demands and unsustainable lifestyles among the richer segments, which place immense stress on the environment."[37] As a result, while "all countries should strive to promote sustainable consumption patterns . . . [d]eveloped countries should take the lead."[38]

This language detailing the developed world's responsibility to address consumption is noteworthy. Because Agenda 21 was adopted by consensus, it represents the first time that developed countries have acknowledged their primary responsibility in reducing the environmental impacts of consumption. The drafting of Chapter IV was contentious and has

---

[32] *Id.* The Netherlands' standard of living is dependent upon large quantities of imported resources. A trade economist would likely argue that this situation is a perfect expression of comparative advantage, with the Netherlands exporting the goods it can best produce and importing the goods others can best produce. Equally, it must be recognized that the Netherlands is exporting the negative externalities of its consumption. *See infra* Part III.

[33] This is embodied in Principle 3 of the Rio Declaration: "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations." United Nations Conference on Environment and Development: Rio Declaration on Environment and Development, U.N. Doc. A/Conf.151/5/Rev.1 (1992), *reprinted in* 31 INT'L LEGAL MATERIALS 874, 877 (1992).

[34] *See generally* REPORT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT, Vol. IV, U.N. Doc. A/Conf. 151.26 (1992).

[35] Since the requirements of Agenda 21 are not mandatory, it would appropriately be described as "soft" international law. *See, e.g.*, Hans W. Baade, *The Operation of Foreign Public Law*, 30 TEX. INT'L L. J. 429, 446 (1995) (discussing soft international law).

[36] REPORT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT, Vol. IV, at 32, ¶ 4.3, U.N. Doc. A/Conf.151.26 (1992).

[37] *Id.* at 33, ¶ 4.5.

[38] *Id.* at 34, ¶ 4.8 (a), (b).

remained politically charged because it represents the broader environmental conflict between the countries of the Northern and Southern hemispheres. In simple terms, much of the sustainability debate between developed and developing countries has consisted of mutual finger-pointing: the North blaming the South for overpopulation and the South blaming the North for overconsumption.[39] At its most extreme, sustainable development has been characterized as a means to deny developing countries the same lifestyle and levels of consumption enjoyed by developed countries.[40]

Ultimately this finger-pointing is futile because as the *I=PAT* model demonstrates both accusers are culpable; a society's total burden on the ecosystem is a function of not only its population size, but also its consumption levels and technological base.[41] Presenting overconsumption and overpopulation as an either/or choice masks the importance of addressing *both* issues in the North and South. The North, though, clearly bears a heavy duty not only because of the magnitude of its consumption impacts but also because developed countries' lifestyle and consumption patterns and levels serve as the model for poorer countries.[42]

C. Clarifying the Terms

The overarching product of the Earth Summit negotiations was global agreement on a strategy of sustainable development, and this phrase has served well its rhetorical and political purposes.[43] All the world's leaders approved it, and it has become a common term linking environmental con-

---

39 JANICE JIGGINS, CHANGING THE BOUNDARIES: WOMEN-CENTERED PERSPECTIVES ON POPULATION AND THE ENVIRONMENT 11-12 (1994).

40 *See, e.g., India Says Rich Flouting Earth Summit Promises*, INTER PRESS SERVICE, May 11, 1994, *available in* LEXIS, News Library, Inpres file.

41 *See supra* notes 21-22 and accompanying text.

42 *Commission on Sustainable Development*, *supra* note 17, at 3-4. The Commission noted that:

> [T]he Western consumer lifestyle currently serves as a model and inspiration to millions of people in poorer countries. . . . Achieving sustainable development at a global level will depend critically on the development trajectory followed by developing countries whose current consumption levels are relatively very low. It is therefore essential that richer nations be able to demonstrate that resource-efficient, low-pollution lifestyles are both feasible and desirable.

Id.

One study estimates that a U.S. citizen has roughly 30 times greater environmental impact than a citizen of a poor developing country. Daily & Ehrlich, *supra* note 8, at 762; *see also* Jacobsen, *supra* note 18, at 266-67 (explaining that overconsumption occurs in less developed countries, as well). Jacobsen noted that:

> The woman who cooks in an earthen pot over an open fire uses perhaps eight times more energy than her affluent neighbor with a gas stove and aluminum pans . . . . Although the South and the North share some remedies for their respective consumption problems, the origins of those problems are vastly different. The industrialized world's consumption problem derives from excess. The Third World's consumption problem stems from poverty.

Id. at 267.

43 REPORT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT, Vol. IV, at 4, ¶ 2.1, U.N. Doc. A/Conf.151.26 (1992).

cerns with economic and social policies. To provide guidance in specific policy formation, however, the term sustainable development must have more substance than simply providing for the needs of future generations. Agenda 21 attempts to provide useful meaning by breaking sustainable development into two parts, sustainable production and sustainable consumption.[44]

Sustainable production encompasses *how* we produce goods and services. It addresses traditional images of pollution, such as belching smokestacks, pipes pouring out toxic effluents, and barrels of industrial waste. Most of our environmental laws have addressed pollution and, therefore, might be described as production laws.[45] As Professor Richard Lazarus has described, "[e]nvironmental protection policy has been almost exclusively concerned with two basic issues during the last several decades: (1) what is an acceptable level of pollution; and (2) what kinds of legal rules would be best suited for reducing pollution to that level."[46]

Sustainable consumption garners much less attention. It addresses fundamentally *what* we consume. This includes both how well we consume (patterns of consumption) and how much we consume (levels of consumption). These two aspects of consumption are quite distinct. As we shall see in Part III, the law is more effective in addressing patterns of consumption (e.g. mandating catalytic converters on cars) than levels of consumption (e.g. regulating how many cars are sold).

Because most environmental laws address issues of production rather than consumption, it is instructive to examine the two concepts of sustainable production and sustainable consumption and their basic differences by contrasting the way each concept defines the problem, defines the solution, and employs legal and policy tools to achieve the solution.

With sustainable production, we know what the problem is—pollution—and have identified a long term goal—an industrial policy of minimizing discharge of pollutants.[47] We also know how to achieve the goal,

---

[44] "The major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production in industrialised countries." *Id.* at 32, ¶ 4.1.

[45] *See, e.g.*, CWA, 33 U.S.C. §§ 1251-1387 (1994); CAA, 42 U.S.C. §§ 7401-7671q (1994); RCRA, 42 U.S.C. §§ 6901-6992k (1994).

[46] Richard Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787, 787 (1993).

[47] How minimal the level of pollution discharge should be is, of course, a disputed question. From an economics perspective, one would rephrase the question to ask what level of pollution is optimal. As one approaches zero discharge the marginal cost of pollution reduction rises as an asymptote, therefore at a certain point the social benefits will be exceeded by the costs of reduction and, beyond that point, will be greatly exceeded. This cost-benefit point of balance, however, varies with the industry and constantly shifts as we learn more of health effects previously little understood and as the costs of pollution control are reduced through new technologies and pollution prevention measures. While there is genuine disagreement over optimal levels of pollution, for most pollutants the band of disagreement is relatively narrow. *See* ROBERT W. HAHN, A PRIMER ON ENVIRONMENTAL POLICY DESIGN 6-7 (1989).

Despite the debate over optimal levels of pollution discharge, corporations' public support of "zero discharge" and "zero emissions" goals has become remarkably commonplace.

thanks to over twenty-five years of modern pollution laws and experience with a variety of policy instruments. The tools are already present in our environmental laws, ranging from command-and-control regulations in the Clean Water Act[48] and manifest systems for solid waste in the Resource Conservation and Recovery Act,[49] to emissions trading in the Clean Air Act,[50] substance bans in the Toxic Substances Control Act,[51] and strict joint and several liability in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.[52]

Current debates over sustainable production focus on the best means to reduce pollution further. How can we make the laws more efficient through risk and economic analysis?[53] How can application and enforcement of environmental laws be made more equitable?[54] These issues are surely important, but remain entirely *strategic* considerations. In brief, over the last quarter-century, we have identified the basic problems posed in minimizing pollution discharge and now have a good idea of how to solve them. At issue is whether we have the political will and are willing to pay the price.

While a production process with no waste is impossible, aggressive pollution prevention programs with closed loop systems and on-site recycling, for example, can drive down waste emissions from a plant close to zero. *See DuPont Completes Trackdown Of All Toxic Waste Sources*, ECO-LOG WEEK, Apr. 19, 1996, *available in* 1996 WL 8729346 (citing achievement of reducing or eliminating emissions from all toxic waste sources identified at the company's production facilities); *see also* Vasanthakumar N. Bhat, *Benchmarking for Environmental Excellence*, INDUS. MGMT., Jan. 1995, at 9, *available in* 1996 WL 12325760 (contending that the concepts of zero discharge and total pollution management are the primary components of the competitive challenge facing American corporations in the 1990s); *USG Promises World-Class Business Operation In Bridgeport*, CHATTANOOGA FREE PRESS, Nov. 19, 1996, at B1, *available in* LEXIS, News Library, Chtms File (discussing the opening of a new plant to produce Sheetrock in northern Alabama which will recycle 100 percent of its production waste and will have zero discharge into the Tennessee River); *WLSSD Aims for Zero Discharge; Cuts Toxic Load To Great Lakes*, SLUDGE, Sept. 25, 1996, *available in* 1996 WL 7982372 (describing the successful toxics-reduction program of the Western Lake Superior Sanitary District, which serves the Duluth, Minnesota area); Richard Zanetti, *Zero Discharge: No Longer a Pipe Dream*, CHEMICAL ENGINEERING, July 1995, at 5, *available in* LEXIS, News Library, Chemen File (discussing major successes in water conservation in the power, petroleum refining, and pulp and paper industries).

[48] 33 U.S.C. §§ 1251-1387 (1994).

[49] 42 U.S.C. §§ 6901-6992k (1994).

[50] 42 U.S.C. §§ 7401-7627 (1994).

[51] 15 U.S.C. §§ 2601-2692, 2605 (1994).

[52] 42 U.S.C. §§ 9601-9675, 9607 (1994).

[53] *See generally* Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and "Fine-Tuning" Regulatory Reforms*, 37 STAN. L. REV. 1267 (1985) (arguing that although uniform regulatory standards can sometimes be inefficient, they may be more effective than fine-tuning schemes in achieving actual environmental successes); Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333 (1985) (arguing that economic incentives can be used as an alternative to command and control regulations and that current uniform standards waste billions of dollars a year).

[54] Lazarus, *supra* note 46, at 787; *see generally* Vicki Been, *What's Fairness Got To Do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001 (1993); CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS (Robert D. Bullard ed., 1993).

With sustainable consumption, in contrast, there is neither a common understanding of the problem nor of the solution. If our current practices represent overconsumption, then what level of consumption *is* sustainable? Does it include a two-car garage? Does it include the poster child of the throw-away society, the disposable camera? No one really knows.[55] Unlike sustainable production's straightforward goal of minimizing pollution, sustainable consumption's ultimate objective remains indistinct, blurred by disagreement over appropriate measures, issues of international and intergenerational equity, and, most important, implications on individual lifestyles.[56]

Compounding the uncertainty about when consumption becomes overconsumption is a lack of policy experience. Over the past twenty-five years, no country's laws have addressed the environmental impacts of consumption in a systematic manner. In the United States, as explained above, our laws have largely focused on the impacts of production.[57] A few regulations directing consumption patterns do exist, such as the mandates for lead-free gasoline and energy appliance labeling, and the recent green government procurement standards, but one has to look hard to find laws of this type.[58] And, until recently, the search has been no easier in Europe.

This imbalance seems strange because, *a priori*, policies focused on products inherently should be more powerful than policies directed at production. Products have environmental impacts throughout their lifecycle,

---

[55] The President's Council on Sustainable Development has concluded that

> [a]nnual per capita gains in reducing wastes, improving resource efficiency, and promoting economic growth must exceed 1 percent to translate into real reductions in environmental impact and real growth in the American standard of living . . . . Based on current trends, efficiency in the use of all resources would have to increase by more than 50 percent over the next four or five decades just to keep pace with population growth.

SUSTAINABLE AMERICA, *supra* note 11, at 143.

The economist Herman Daly has estimated that current technology would require a twenty-fold improvement in environmental performance by 2030 to achieve sustainable levels, even if growth rates in global pollution, ecological degradation, and habitat destruction stopped. DURNING, *supra* note 9, at 59.

[56] A significant reduction in resource consumption would dramatically change the average American's lifestyle while raising international equity issues. If a sustainable level of consumption could be determined for the United States, does that mean developing countries have a right to rise to the same level? The average American annually consumes 115 times more paper and 227 times more gasoline than the average Indian citizen. ROBINS AND ROBERTS, *supra* note 12, at 9. Should consumption of the world's resources be equal or more equitable?

Our responsibilities to future generations are implicated as well. *See generally* EDITH BROWN WEISS, INTERGENERATIONAL EQUITY: A LEGAL FRAMEWORK FOR GLOBAL ENVIRONMENTAL CHANGE (1991). In view of these subjective decisions, Elizabeth Dowdeswell, Executive Director of the United National Conference of Environment and Development (UNEP), has aptly commented, "ultimately, sustainable consumption is not a scientific or a technical question. It really is first and foremost a question of values." ROBINS & ROBERTS, *supra* note 12, at 17.

[57] *See supra* notes 39-44 and accompanying text.

[58] *See infra* Part III (detailing the range of consumption laws).

from extraction, transport, and production, to distribution, use, and disposal. But sustainable production laws affect only two stages of the lifecycle's impacts, production and disposal. By regulating the product through sustainable consumption provisions, one can reduce impacts over the *entire* lifecycle.

As an example, it is one thing to reduce the environmental impacts of mercury batteries during production (through effluent filtration) and disposal (through special sites to prevent leaching into the groundwater). These are effective, preventive actions. It is quite another thing, however, to produce a mercury-free battery and avoid entirely the problems of heavy metals throughout the lifecycle. Thus, initial product design can be far more important in reducing environmental impacts than pollution control measures focusing on the production or disposal stages.[59]

Why are consumption laws such a weak sibling of production laws? Primarily because issues of sustainable consumption go to the very heart of societal norms such as lifestyle, equity, and cultural identity–issues that cannot be easily resolved in the legislature or courtroom. As an American diplomat candidly remarked in preparing for the Earth Summit, "the American lifestyle is not up for negotiation."[60]

III. The Economics of Sustainable Consumption

At its broadest, sustainable consumption embraces a daunting range of fields, including transportation, energy consumption, land use, fishing, and others. Given the vast breadth of impacts from everything we consume, how can one analyze the relationship between sustainable consumption and the law in any meaningful way?

In order to explore the practical aspects of sustainable consumption, this Article focuses on the legal treatment of *consumer products* as an archetype, for many of the basic issues raised in this area are equally valid in other sectors. Rather than struggling with an all-inclusive and, therefore, vague definition, our analysis begins with a thought experiment—

---

[59] This example is a standard case of pollution prevention. Pollution prevention is not always a win-win situation, however, because eliminating mercury may require trade-offs in performance or price.

In studying competition in the marketplace, the U.S. National Research Council (NRC) found that nearly three-quarters of the costs in the development, manufacture, and use of a product are determined at the initial design stage. NRC, Improving Engineering Design: Designing For Competitive Advantage 7-8 (1991) [hereinafter Improving Engineering Design]. It is equally true that many of a product's environmental impacts are determined at the design stage, and comprehensive design criteria form a core principle of pollution prevention.

[60] Joe Kirwin, Less Than $5 Billion Pledged for Agenda 21 Action Plan; Final Document to Be Released by United Nations in September, 15 Int'l Env't Rep. (BNA) No. 14, at 486 (July 15, 1992), available in LEXIS, BNA Library, BNAEVR File. Indeed, at a political level the exact measure of sustainable consumption is not quantitative. As Elizabeth Dowdeswell, Executive Director of the United National Conference of Environment and Development (UNEP), has explained, "ultimately, sustainable consumption is not a scientific or a technical question. It really is first and foremost a question of values." Robins & Roberts, *supra* note 12, at 17.

envisioning the ideal marketplace.[61] What would a supermarket look like in a more sustainable consuming society? If we walked down the aisle, what would be different from today?

A. Price and Information Failures

Fundamentally, there would be one major change. The consumer would be far better informed to make purchasing decisions. As a result, there would be different prices of goods on the shelves and, in some cases, very different products as well. The costs would be different because they would reflect the total environmental costs throughout the product's lifecycle. Durable goods might be less expensive than disposable products, and all goods would be supplemented by more comprehensive information on their environmental impacts.

An aerosol air freshener provides an illustrative example. At the moment, one can buy such a product for around $1.50. This price includes the actual material costs (extraction and production of steel and tin for the aerosol can, extraction of oil and its synthesis into plastic for the label and cap, and extraction and synthesis of butane and perfume within the can), the manufacturer's costs (research and development, manufacturing, advertising, and distribution), the retailer's costs, and profit margins. The retail price, however, does not capture all of the following costs: 1) the resources and emissions from shipping these raw materials all over the world, 2) natural resource damage from the mining tailings or oil exploration, 3) manufacturing waste, 4) volatile organic compounds' contribution to smog; and 5) disposal of the product. Retail price also fails to capture depletion costs as finite resources are expended.[62]

---

[61] Negotiators from most of the OECD countries have agreed on the following definition of sustainable consumption:

> the use of services and related products which respond to basic needs and bring a better quality of life, while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardise the needs of future generations.

Id. at 9.

The same political strategy is at work here as with sustainable development: environmental concerns can be met today without sacrificing a better quality of life. To be honest, however, the definition is not particularly useful.

[62] The problem posed by externalities is a foundation of environmental economics. *See, e.g.*, PETER S. MENELL & RICHARD B. STEWART, ENVIRONMENTAL LAW AND POLICY 54-57 (1994) (describing how the market exchange price system fails to account for collective goods, including many forms of environmental quality).

This failure to capture environmental costs is equally true at the national accounts level, as expressed by Gross National Product. As Nobel laureate Robert Solow has described:

> It is a commonplace thought that the national income and product accounts, as currently laid out, give a misleading picture of the value of a nation's economic activity to the people concerned. . . .
>
> Suppose two economies produce the same real net national product, with due allowance for depreciation of fixed capital, but one of them is wasteful of natural resources and casually allows its environment to deteriorate, while the other conserves resources and preserves the natural environment. In such a case we have no trouble

While not easily put into monetary terms, these externality costs are very real and seldom borne by industry (either abroad or in the United States). If the price of the aerosol captured the full environmental costs, it might cost $1.51, perhaps $1.60, or perhaps even more. Importantly, product alternatives with smaller externalities (such as scented flowers or locally produced goods) might prove less expensive in the true sense, less expensive to buy and less costly to the environment. No one knows the full costs of an aerosol air freshener at the moment since the environmental costs are not accounted for. In this sense, head-to-head price competition in the marketplace is distorted because it is artificially biased toward products with environmental externalities. As a result, the consumer is unaware of both the hidden impacts and costs of the purchase.[63]

In simple terms, because the prices of products do not reflect their true environmental costs, and because they send inaccurate price and market signals, consumers may not make environmentally-responsible purchases, and, importantly, there is little economic incentive for companies to offer more environmentally-responsible products. Indeed, today's rational profit-maximizing consumer is given signals that actually may *promote* environmentally-damaging behavior. This is as true for resource consumption as it is for consumer products.[64]

This problem of externalities is familiar to environmental scholars.[65] Unless the external costs are captured and internalized in the product

---

seeing that the first is providing less amply for its citizens than the second. So far, however, the proper adjustments needed to measure the stocks and flows of our natural resources and environmental assets are not being made in the published national accounts. . . .

Robert Solow, *An Almost Practical Step Toward Sustainability*, 19 RESOURCES POLICY 162 (1993), *reprinted in* FOUNDATIONS OF ENVIRONMENTAL LAW AND POLICY 312-13 (Richard Revesz ed., Oxford University Press 1996).

63 *See* BETTE FISHBEIN, GERMANY, GARBAGE AND THE GREEN DOT: CHALLENGING THE THROWAWAY SOCIETY 175-76 (1994) [hereinafter GARBAGE AND THE GREEN DOT]. Professor Peter Menell has argued that externalities are adequately captured by environmental regulations in many areas. Menell, *supra* note 18, at 1444-45. That is, compliance with hazardous waste or emissions regulations creates costs that effectively capture externalities. *Id.* at 1452-53. This is no doubt true in a number of contexts (indeed some externalities may be over-internalized), but it is not done in a comprehensive manner throughout the life-cycle.

64 Through government intervention and subsidies, prices for basic resources such as water, energy, and timber are artificially low, thus, masking the costs of environmentally harmful activities at the expense of the taxpayer. *See* FRANCES CAIRNCROSS, COSTING THE EARTH 69-87 (1991) (offering examples of subsidies for energy production, agriculture, pesticides, mining, and forestry); *see also* Jessica Matthews, *Oh Give Me a Home Where the Subsidies Roam*, WASH. POST, Oct. 3, 1991, at A23, *available in* LEXIS, BNA Library, Majpap File (discussing historic rationale for government subsidies as incentive to develop the western United States); Harold M. Hubbard, *The Real Costs of Energy*, SCI. AM., Apr. 1991 (adding the cost of Department of Defense action in the Persian Gulf to the cost of a barrel of oil); MARK KOSMO, WORLD RESOURCES INSTITUTE, MONEY TO BURN? THE HIGH COSTS OF ENERGY SUBSIDIES (1987) (discussing the current underpricing of petroleum products, electricity, natural gas, and coal in India).

65 *See, e.g.*, MENELL & STEWART, *supra* note 62, at 54-57 (describing how the market exchange price system fails to account for collective goods, including many forms of environmental quality).

price and market signals are accurate, it is futile to expect the market alone to solve environmental problems. As Chapter IV of Agenda 21 succinctly concludes, "[w]ithout the stimulus of prices and market signals that make clear to producers and consumers the environmental costs of the consumption of energy, materials and natural resources and the generation of wastes, significant changes in consumption and production patterns seem unlikely to occur in the near future."[66] Indeed, this fundamental problem of internalizing externalities, of getting the price right, has been recognized for more than twenty years. The classic response was formulated by the Organisation on Economic Co-operation and Development in 1972 as the Polluter Pays Principle (PPP).[67] The party causing the pollution should pay for the cost of its impacts.

Market failure often justifies government intervention, whether it be through antitrust law, tort law, or the regulation of pharmaceuticals.[68] As discussed above, environmental externalities distort product prices in the marketplace and can lead to environmentally-harmful purchasing behavior. In the face of this market failure, what role should government play in correcting price signals and promoting sustainable consumption?[69]

IV. SUSTAINABLE CONSUMPTION AND THE LAW

To reduce the environmental impacts of consumption, legislation creates three distinct governmental roles. In the context of consumer products, government can act directly as a *gatekeeper*, mandating product performance and content. Government can also act as a *source of information*, requiring objective environmental impact data to facilitate more rational purchasing decisions. Finally, government can act as a *price-con-*

---

[66] REPORT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT, Vol. IV, at 39, ¶ 4.24, U.N. Doc. No. A/Conf. 151.26 (1992).

[67] ORGANISATION ON ECONOMIC CO-OPERATION AND DEVELOPMENT, THE POLLUTER PAYS PRINCIPLE (1975) [hereinafter POLLUTER PAYS PRINCIPLE].

[68] In antitrust, government intervention prevents rent-seeking by monopolies. Sherman Anti-Trust Act, 15 U.S.C. §§ 1-7 (1994). In the pharmaceutical industry, the state may limit liability and extend patent rights in order to encourage the production of "orphan" drugs for rare diseases. *See* John J. Flynn, *The Orphan Drug Act: An Unconstitutional Exercise of the Patent Power*, 1992 UTAH L. REV. 389 (discussing the constitutionality of the federal Orphan Drug Act of 1983). In tort law, a court may deem a whole industry's safety standards below an acceptable standard, thus removing a perverse incentive to stay at a low level to gain the benefit of the industry custom defense. New England Coal & Coke Co. v. Northern Barge Corp., 60 F.2d 737, 740 (2d Cir. 1932). For a general discussion of these and related topics, see generally JOHN KENNETH GALBRAITH, ECONOMICS AND THE PUBLIC PURPOSE 288-92 (1973) (discussing government intervention by broadening legislation putting limits on economic growth) and Robert Hahn, *An Evaluation of Options for Reducing Hazardous Waste*, 12 HARV. ENV. L. REV. 201, 201-30 (1988) (a thorough analysis of government policies to reduce hazardous waste).

[69] Physical infrastructure is another critically important determinant of consumption many people ignore. *See* ROBINS & ROBERTS, *supra* note 12, at 11. Although beyond the scope of this paper, the reader should take note of the powerful consequences of subsidies and direct government funding for road construction, power grids, and sewage and gas lines which predetermine the form of technology and, therefore, its consumption impacts (e.g., cars on roads versus commuter rail).

troller, capturing externalities through fees and taxes. In fact, examples from around the world show that governments assume all three roles with varying success and legal implications. In keeping with the earlier supermarket metaphor, one might describe the government's activities as taking place *at the entrance*, *on the label*, and *at the cash register*.

It is worth noting at the outset, however, the paradox inherent in government taking any action that might reduce consumption, for governments presumptively should promote consumption in order to *increase* economic growth. Classical economics predict that increased transactions will increase overall wealth. When do governments regulate consumption? Traditionally, in times of crisis and resource scarcity. When food or fuel is in very short supply, for example, governments often ration access (as happened in America during World War II or the oil embargo of the 1970s). Without government intervention, the decrease in supply and increase in demand would drive up the price of goods beyond the reach of most consumers and reward hoarding.

The exact opposite is the case with sustainable consumption, however. Here, the market may drive prices too *low* because of market failure to capture externalities in the product price. As a result, the law must either reduce product choice or increase product price to capture externalities and mimic the market impacts of scarcity. Often the scarcity in this case is not a shortage of gas or nylon but, rather, diminution of public environmental goods such as clean air or a protective ozone layer.[70] The following sections, also summarized in the tables below, provide a range of examples showing how laws currently address the environmental impacts of consumption.

Government at the Entrance Door
Mandated Product Performance
Mandated Product Content
Mandated Production Processes and Methods
Government Procurement Requirements
Government on the Label
Energy Efficiency Labeling
Green Marketing Guidelines
Hazardous content labeling
Eco-Labels
Government at the Cash Register
Product-Specific Taxation

[70] Many environmentalists and scientists might argue that we currently do face a crisis from the scarcity of public environmental goods, thus justifying more direct government intervention. The general public, however, clearly does not share this sense of urgency. *See* Hurwitt, *supra* note 30 (arguing that immediate population control measures are needed to achieve sustainable population levels).

A. Government at the Entrance Door

The most extreme version of government-directed consumption patterns occurs when either product performance or content is mandated by law. In essence, the government stands in front of the door, stating that "if you do not meet these requirements, you cannot even enter the market to sell your products." While this approach is politically difficult since such measures are always opposed by the affected industries, there are a number of laws operating in this manner.[71]

The first such group of laws mandates product performance. The technology-forcing history of the Clean Air Act (CAA)[72] provides a number of examples. When amended in 1970, the CAA required auto manufacturers to reduce hydrocarbon, carbon monoxide, and nitrous oxide emissions by roughly 90% over a period of five years or face a shut-down of the industry.[73] While the technology to achieve this standard did not exist at the time of the adoption of the amendments to the CAA, catalytic converters were standard features by the late 1970s. The Corporate Average Fuel Economy (CAFE) standards for auto fuel efficiency are another example of direct government intrusion into product design.[74] The most recent example lies in the state of California's requirement that 10% of cars sold in California by 2003 have no emissions at all.[75]

The actual composition of products may also be mandated by government. Product content requirements may be positive (product must contain "X") or negative (product cannot contain "Y"). Indeed, such content requirements have been the focus of much legislation in recent years.[76] A

---

[71] In the face of proposals for gate-keeper legislation, industry traditionally argues that the market should be left on its own and that government intervention is paternalistic, limiting consumers' choice of product performance and specifications. In response, such laws are generally justified through arguing market failure or net social benefit (i.e., damage to public health and public environmental goods surpass the benefits of unrestrained consumption).

[72] 42 U.S.C. §§ 7401-7671q (1994).

[73] *See generally* James A. Henderson, Jr. & Richard N. Pearson, *Implementing Federal Environmental Policies: The Limits of Aspirational Commands*, 78 COLUM. L. REV. 1429, 1445-53 (1978) (discussing the regulation of auto emissions under the 1970 and 1977 amendments to the CAA).

[74] Energy Policy and Conservation Act of 1975, 15 U.S.C. §§ 2002-2013 (1988), *repealed by* Pub. L. 103-272 § 7(b), 108 Stat. 1379 (1994). CAFE standards were passed in response to the energy crisis brought on by the OPEC oil embargo in 1973. 135 CONG. REC. 7251-02, 7255-56, 1989, *available in* WL 192256 (statement by U.S. Sen. Richard A. Bryan (D-Nev.) June 22, 1989).

[75] CAL. CODE REGS. tit. 13 § 1960.1(g)(2) (1991). General Motors is already offering an electric car to Southern California motorists on a lease basis. *See generally* Dan Freedman, *Clearing the Air*, CAL. LAW., Apr. 15, 1995, at 47, 85. For the debate in the Northeast, see Tara A. Stanton, *The Battle Over the Electric Car: The Big Three vs. The Northeastern States*, 8 TUL. ENVT'L. L. J. 553, 553-74 (1995).

[76] Examples include the Clean Air Act's requirement of reformulated gasoline and the regulation of volatile organic compounds (VOCs) in a wide range of household products sold around Los Angeles. 42 U.S.C. § 7545(k) (1995). For a discussion on VOC content, see Thomas J. Donegan, Jr., *Fifty Years of Cosmetic Safety: A Government and Industry Partnership*, FOOD AND DRUG L. J. (50TH ANNIVERSARY SPECIAL ISSUE) 151, 160 (1995). In addition,

number of statutes grant the government authority to ban the sale or inclusion of chemicals posing unacceptable toxicity risks.[77] Such laws are known as "rates and dates" laws.[78] Government may also ban a product irrespective of its content or performance but, rather, based on how it was produced.[79] A number of states have laws mandating minimum recycled content requirements for packaging and newsprint.[80] Indeed, some courts require that briefs and motions be submitted on paper with minimum recycled content levels.[81]

The role of government at the entrance door is most directly seen in public procurement. If products do not meet the requirements set forth in procurement guidelines, the government will not buy them. President Clinton's Executive Order 12873 seeks to create a stronger market for environmentally-preferable goods.[82] As a result, the Environmental Protection

---

one state (Maine) has banned multi-layer aseptic beverage packaging, over ten states bans toxic heavy metals in packaging, four states limit the amount of mercury in household batteries, and there are municipal bans on polystyrene foam food packaging in Minneapolis/St. Paul, Minnesota and Portland, Oregon. OFFICE OF TECHNOLOGY ASSESSMENT, GREEN PRODUCTS BY DESIGN 82 (1992) [hereinafter GREEN PRODUCTS].

[77] The treatment of alar in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. §§ 136-136y (1994) and the banning of polychlorinated biphenyls (PCBs) in the Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2601-2692, 2605(e) (1994) are two well-known examples. For the alar story, see Marina M. Lolley, *Carcinogen Roulette: The Game Played Under FIFRA*, 49 MD. L. REV. 975, 984 (1990). As an example of state level action dealing with highly toxic substances, four states place limits on mercury in household batteries. GREEN PRODUCTS, *supra* note 76, at 82.

[78] GARBAGE AND THE GREEN DOT, *supra* note 63, at 191.

[79] *See, e.g.*, Marine Mammal Protection Act (MMPA), 16 U.S.C. §§ 1361-1407 (1994). The MMPA's ban of tuna imports caught in association with dolphin mortality has been the basis for the tuna/dolphin dispute driving the trade and environmental debates. *See generally* DANIEL C. ESTY, GREENING THE GATT: TRADE, ENVIRONMENT, AND THE FUTURE 27-32 (1994).

[80] D.C. CODE ANN. § 6-3419 (West 1997); ALA. CODE § 41-9-195 (Michie 1996); ARIZ. REV STAT. § 49-834 (West 1997); CONN. GEN. STAT. ANN. §§ 22a-256.n (West 1997); FLA. STAT. ANN., § 403.7195 (West 1997); 415 ILL. COMP. STAT. ANN. 110/2001-2013 (West 1997). These laws require plastic packaging sold in-state either to contain a set amount of recycled content, be re-usable a certain number of times, or have the polymer recycled at a fixed level within the state. Oregon, for example, requires that rigid plastic containers contain 25% recycled content, be made of plastic that is being recycling in the state at a rate of 25%, or be a package that is used five times or more for a similar use. OR. REV. STAT. § 459A.655 (1995). Rigid plastic containers may also be sold in-state if, in the aggregate, they are recycled in-state at a rate of 25%. *Id.*

Thirteen states have passed legislation requiring mandatory recycled content levels in newsprint; fifteen have voluntary agreements. *See* Chaz Miller, *Recycling in the States: 1994 Update*, WASTE AGE, Mar. 1995, at 93, *available in* 1995 WL 14189951. Minimum recycled content laws have also been passed in six states for telephone books and glass and plastic containers. *Id.* at 96, 98.

[81] California's court rules require the use of recycled paper in original briefs and all copies of briefs. CAL. RULES OF COURT 44(a) (West 1997).

[82] Exec. Order No. 12,873, 58 Fed. Reg. 54,911 (1993). The Order requires every executive agency to practice waste prevention and recycling as well as promote the market for recovered materials through its procurement process. *Id.* This revoked the earlier Executive Order 12,780, signed by President Bush in October 1991, which required federal agencies to increase recycling and waste reduction efforts as well as promoting through its procurement the market for recycled materials. GREEN PRODUCTS, *supra* note 76, at 80.

Agency (EPA) is developing a host of "green" product specifications.[83] While industry may choose not to design its products in line with federal specifications, the government accounts for 20% of gross domestic product and necessarily has a great influence on the marketplace.[84]

B. Government on the Label

Once the product is allowed into the market and on the shelf, consumers need accurate information in order to make rational purchasing decisions. Barriers to this information flow include the failure to capture externalities in product prices (addressed in the next section), the prohibitively high cost for consumers to collect relevant environmental information on their own, and manufacturers' reluctance to disclose product data. Government labels address this gap in the market through three forms: information disclosure, warnings, and endorsements.

Perhaps the most durable examples of mandatory environmental information disclosure are the energy-efficiency labels found on appliances and the miles-per-gallon information on new cars.[85] These labels provide

---

Section 6002 of the Resource Conservation and Recovery Act of 1976 (RCRA) was the impetus for this executive order through its requirement that EPA develop procurement guidelines for products made from recovered materials. 42 U.S.C. § 6002 (1994). EPA has published guidelines for paper products, lubricating oils, retreaded tires, building insulation, cement containing fly ash, and others. 40 C.F.R. §§ 247.1-7.17 (1996).

Additionally, many states encourage the development of environmentally preferable products, as well. This is achieved through procurement specifications, grant programs, and electronic bulletin boards for recycled materials. For details on programs implemented in Wisconsin, California, New York, Minnesota, and Washington, see Jill Slovin, *Developing Markets to Close the Loop*, WORLD WASTES, Oct. 1993, at 42, *available in* LEXIS, News Library, Mags File. Thirty-five states offer procurement preferences for paper with recycled content. Miller, *supra* note 80, at 98.

[83] Exec. Order No. 12,873, 58 Fed. Reg. 54,911, 54,914-15. The EPA has already issued guidelines for concrete cement containing fly ash, retread tires, recycled paper products, refined lubricating oil, and insulation containing recycled material. *Id.* at 54,914. Federal agencies are required to procure all goods in compliance with these guidelines unless written justification is provided. *Id.* Federal agencies are required to purchase paper with 30% recycled content by the end of 1998. *Id.* at 54,916.

[84] GREEN PRODUCTS, *supra* note 76, at 96. Equally, procurement guidelines can hinder environmentally-responsible products. The Office of Technology Assessment has identified disincentives such as "military specifications that require the use of virgin materials, CFC cleaners, and leaded paints where these materials are not necessary for product performance . . . [and] RCRA regulations that make the recycling of hazardous wastes more costly than disposing of them." *Id.* at 79-80. In response to criticism, the Pentagon is reviewing over 40,000 military specifications requiring the use of hazardous materials to see if environmentally-preferable alternatives can be substituted. *Id.* at 14.

[85] The Energy Policy Conservation Act of 1976, as amended by the National Appliance Energy Conservation Act of 1987 and the Energy Policy Act of 1992, is the primary source of information disclosure law. *See* 42 U.S.C. §§ 6293, 6295, 6302(a)(5) (1997); *see also* 16 C.F.R. §§ 305.1-305.54 (1995). The Act requires that covered parties place energy guide labels on certain new home appliances. 42 U.S.C. § 6294 (1994). The CAFE standards were also established by EPCA, requiring the placement of labels on all new cars showing the miles-per-gallon of the vehicle for city and highway driving. 15 U.S.C. § 2006 (1994).

It is interesting to note that both programs, which remain popular with consumers, are more important for the economic than the environmental information. It is the operating

clear information to the consumer on the product's rate of consumption of energy while in use.[86] At the same time, the use of misleading marketing phrases such as "ecological," "environmentally friendly," "recyclable," and "green," while rampant in the early 1990s, have been brought under control by state and Federal Trade Commission guidelines on environmental claims.[87]

Negative labels provide equally important information. For example, the Clean Air Act requires warning statements on products containing ozone-depleting substances.[88] Environmental warning labels are more common at the state level than the federal level. California Proposition 65, for instance, requires warning labels for products containing chemicals which have been determined to cause cancer, or which have been deemed to be developmentally or reproductively toxic.[89] While controversial, Proposition 65 has led to the reformulation of a number of consumer products.[90] Similarly, Vermont requires all retailers selling household products containing hazardous constituents to post shelf labels identifying them as such.[91]

Federal government labels endorsing products for environmental reasons are quite new in the United States. For instance, the "dolphin-safe" stickers on cans of tuna derive from 1991 legislation.[92] EPA's Energy Star Computer initiative, awarding a label to personal computers which are highly energy efficient, began in 1992.[93] Outside of the United States, gov-

---

cost of the appliance or car which interests consumers rather than the indirect measure of energy efficiency.

[86] The Netherlands has taken the lead in environmental disclosure, requesting producers of non-food products to provide comprehensive product files open to the public for all its products. *Dutch Scheme Calls for Producers to Supply Environmental Information on Products*, BUS. & THE ENV'T, Jan. 1994, *available in* 1994 WL 2505030. If the voluntary program proves unsuccessful, the government intends to introduce mandatory legislation by 1998. *Id.*

[87] FEDERAL TRADE COMMISSION, GUIDES FOR THE USE OF ENVIRONMENTAL MARKETING CLAIMS (1993); *construed in* EPA, EVALUATION OF ENVIRONMENTAL MARKETING TERMS IN THE UNITED STATES 77-94 (1993). The voluntary guidelines define terms such as "recyclable," "degradable," "ozone safe," and overstatement of environmental attributes.

For state restrictions on environmental claims, see Association of Nat'l Advertisers Inc. v. Lungren, 809 F. Supp. 747 (N.D. Cal. 1992) (upholding California law defining specific environmental terms for advertising purposes against challenge that law violated Constitutional right of free speech, but declaring definition of "recyclable" unconstitutionally vague).

[88] 42 U.S.C. § 7671j (1994). For the EPA implementation plan, see Protection of Stratospheric Ozone; Labeling, 40 C.F.R. § 82 (1996).

[89] California Proposition 65, Safe Drinking Water and Toxic Enforcement Act of 1986, *in* EPA, STATUS REPORT ON THE USE OF ENVIRONMENTAL LABELS WORLDWIDE 164-66 (1993) [hereinafter EPA STATUS REPORT].

[90] *Id.*

[91] SOLID WASTE DIVISION OF THE AGENCY OF NATURAL RESOURCES, VERMONT HOUSEHOLD HAZARDOUS PRODUCT SHELF LABELING PROGRAM 1991, *in* EPA STATUS REPORT, *supra* note 89, at 168-69. The state-approved label for shelf use reads, "REDUCE TOXICS USE. These products contain HAZARDOUS INGREDIENTS." *Id.*

[92] Dolphin Protection Consumer Information Act of 1991, 16 U.S.C. § 1385 (1994).

[93] *EPA Energy Star Logo Premieres*, EPA JOURNAL, July/Aug. 1992, at 2. The program has been very successful, with all the major personal computer manufacturers signing on. In 1993, President Clinton signed an executive order directing the government, the largest com-

ernment-sponsored eco-label programs operate in more than thirty countries.[94] Acting as a seal of approval, eco-labels identify products that are environmentally preferable to competitive products in the same category.[95] The labels are voluntary and, if a manufacturer qualifies, may be placed on the product for a fee.[96]

C. Government at the Cash Register

Perhaps the most effective information provided to a consumer, more clear than positive or negative labels, is price. In fact, most consumption is taxed not at the consumption level but at the production level, because producers pass on the overall costs of compliance with environmental regulations to consumers through product prices. Thus, all other things being equal, products made with hazardous wastes in the manufacturing process should be more expensive than other products because of the added RCRA compliance costs.[97]

In a more direct manner, government can attempt to correct price signals of products by capturing externalities and imposing taxes on specific products. Such taxes shift the relative competitive positions of products within a category. Thus, in the United Kingdom, patterns of consumption are altered by differential taxation, with the result that leaded gasoline is up to ten percent more expensive per gallon than unleaded gas.[98] The levels of consumption are also altered by the absolute amount of tax, driving gas prices over $3 per gallon and increasing the attractiveness of public transport.[99]

The use of taxes to shift consumption patterns for environmental reasons is relatively rare. In the United States, one can find examples at the state level in Idaho, where tax credits are granted for manufacturing post-consumer paper,[100] and at the federal level with taxes on chlorofluorocarbons (CFCs) and ozone-depleting substances.[101] The resounding failure

---

puter purchaser in the world, to purchase only desktop computer equipment with the Energy Star so long as they met performance needs. Exec. Order No. 12,845, 48 C.F.R. 1523.7000 (1996); *see* EPA STATUS REPORT, *supra* note 89, at 136-38.

94 *Id.* at 9.

95 *See generally* EPA STATUS REPORT, *supra* note 89, at i (examining the public policy issues concerning environmental labeling and the current status of ecolabeling). Despite their popularity, labels have generally not had a strong market impact. The U.S. government ruled out a national ecolabel program in 1991 because of concerns about due process challenges to each product criteria. Interview with Sharon Stahl, EPA (March 1991). *But see* Menell, *supra* note 18, at 1436 (arguing that impacts of ecolabeling are questionable).

96 EPA STATUS REPORT, *supra* note 89, at 9.

97 *See* Menell, *supra* note 18, at 1451 (arguing that "internalities" in a product's price captured by environmental regulations often exceed externalities).

98 GREEN PRODUCTS, *supra* note 76, at 69.

99 *Id.* at 104.

100 Robert Steutewille, *The State of Garbage in America*, BIOCYCLE, May 1995, at 30, 36, *available in* LEXIS, BNA Library, Mags File. At least 28 states offer tax incentives for recycling businesses. *Id.*

101 26 U.S.C. §§ 4681-4682 (1994). In Denmark, small taxes are levied on non-reusable packages and in Belgium special "eco-taxes" are levied on a number of disposable products. Jim McCarthy, *Packaging Initiatives*, *in* EXTENDED PRODUCER RESPONSIBILITY: A NEW PRINCI-

of President Clinton's proposed British thermal unit (Btu) tax on gasoline in 1993 illustrates well the political hazards in proposing such measures.[102]

Waste disposal externalities are captured more directly in "advanced disposal fees," which are up-front charges in the purchase price to pay for the ultimate disposal of the product. These are used in Minnesota and New Jersey for nickel-cadmium batteries.[103] Other advanced disposal fees at the state level cover tires, motor oil, lead acid batteries, and major appliances.[104] Household garbage taxes can also be used to capture the externalities of waste disposal more accurately. In Seattle and 2,700 other local jurisdictions, for example, households are charged based on the weight or volume of their trash.[105]

D. Shortcomings of Current Legal Instruments

From the brief examples above, the sheer range of consumption laws is evident. Many of these initiatives have individually been effective in reducing the impacts of consumption. Referring back to the *I=PAT* model

---

PLE FOR A NEW GENERATION OF POLLUTION PREVENTION, PROCEEDINGS OF THE SYMPOSIUM ON EXTENDED PRODUCER RESPONSIBILITY, NOVEMBER 14-15, 1994, WASHINGTON, D.C., 47 (Catherine A. Wilt & Gary A. Davis eds., 1995). The most extreme version, however, is found in Germany, where the city of Kassel levied high taxes on disposable containers. *Cities, Municipalities, Back Tax on Disposable Dishes, Drink Containers*, 18 Int'l. Env't. Rep. (BNA) No. 6, at 225 (Mar. 28, 1995), *available in* LEXIS, BNA Library, BNAEVR File. Fast-food chains and other cafes and restaurants that recycle their disposable cutlery and packaging are exempt. *Id.*

[102] *See* David S. Broder & Michael Weiskopf, *Business Prospered in Democrat-Led 103rd Congress*, WASH. POST, Sept. 25, 1994, at A1, *available in* LEXIS, BNA Library, Majpap File; Tom Wicker, *Waiting for an Environmental President (Disappointment in Bill Clinton's Environmental Policies)*, AUDUBON, Sept. 1994, at 5, *available in* LEXIS, BNA Library, Mags File.

[103] Reid Lifset, *Extended Producer Responsibility in North America: Progress, Pitfalls, and Prospects in the Mid-1990s*, *in* EXTENDED PRODUCER RESPONSIBILITY: A NEW PRINCIPLE FOR A NEW GENERATION OF POLLUTION PREVENTION, PROCEEDINGS OF THE SYMPOSIUM ON EXTENDED PRODUCER RESPONSIBILITY, NOVEMBER 14-15, 1994, WASHINGTON, D.C., 47 (Catherine A. Wilt & Gary A. Davis eds., 1995). Florida levied a two-cent fee on packaging containing recycled content below 50% or whose plastic is recycled at a rate below 50%. Craig Quintana, *State's 2-Cent Recycling Fee to end in October*, ORLANDO SENTINEL, May 12, 1995, *available in* LEXIS, News Library, Orsent File. Following manufacturers' promises to meet recycling goals in the near future, the state legislature did not renew the law in 1995. *Id.* It had been attacked by taxpayer groups and others as a hidden tax and a regressive food tax. *See* Craig Quintana, *Disposal Fee Makes an Exit after 2 Years*, ORLANDO SENTINEL, Oct. 1, 1995, *available in* LEXIS, News Library, Orsent File.

[104] Mark J. Rogoff & John F. Williams, *Finding Funds to Fuel Recycling*, WORLD WASTES, July 1995, *available in* 1995 WL 12627282. Twenty-one states have advanced disposal fees or a form of deposits for tires. Lifset, *supra* note 103, at 46; *see, e.g.*, FLA. STAT. ANN. § 403.7185 (West Supp. 1998) (requiring disposal fee for lead-acid batteries of $1.50).

[105] This is also known as unit based pricing or "pay-as-you-throw." *See* HDR ENGINEERING, INC., U. S. CONFERENCE OF MAYORS, OVERVIEW OF NEW LEGISLATION AND POLICIES FOR MUNICIPAL SOLID WASTE REDUCTION AND RECYCLING 21 (1995). One clear change in behavior has been greater use of the "Seattle Stomp," compacting trash as densely as possible in a barrel to avoid paying for disposal of two barrels' worth of trash. ROBERT HARDAWAY, POPULATION, LAW AND THE ENVIRONMENT 36 (1994).

explained earlier, however, the key question is whether these laws reduce the impacts of consumption *enough* to achieve a sustainable level of consumption given current impacts and increasing population.[106] Taken as a whole, they do not. Indeed, the current consumption laws are inadequate for four reasons.

First, they are unsatisfactory because they represent an ad hoc approach, focusing on isolated, specific impacts of consumption. As with American environmental law in general, many of the product regulations can be traced to specific crises such as the oil shock of the 1970s, the concern over hazardous materials in the 1980s, or the perceived landfill scarcity of the early 1990s. Regulating impacts as they appear in the public eye is neither systematic nor comprehensive; it is haphazard.[107]

Second, the laws do not take a lifecycle perspective. Regulating a specific aspect of product design or content is useful as far as it goes, but it may either miss the product's most significant environmental impact or simply shift the environmental problem to another part of the lifecycle.

Third, few of the initiatives capture, or even attempt to capture, the externalities generated by products. Depending on the product's method of manufacture, compliance with environmental regulations can in some instances effectively capture (or over-capture) externalities, but it certainly does not assure comprehensive coverage. As previously discussed in Part II, this must be done to promote more rational and environmentally responsible purchasing behavior.

Lastly, and most problematically, with few exceptions these laws address patterns of consumption rather than levels of consumption, or how *well* we consume rather than how *much* we consume. Government at the door will improve the environmental quality of goods available to the consumer; government on the label will increase the consumer's purchasing knowledge. But such initiatives permit us to consume better, not less. Our cars may have catalytic converters and we may choose more fuel efficient cars, but we still may each have three or more cars.[108] Government at the

---

[106] *See infra* Part II.A.

[107] Former Administrator of the EPA, Bill Reilly, explained in 1991:

> Although we have achieved important victories over the past two decades, we have developed our environmental policies piecemeal, with each problem addressed separately and without sufficient reference to other problems or to overall effects, risks, and costs. Each time a new issue appeared on the radar screen of public concern, we would unleash an arsenal of control measures in a style reminiscent of the old "space invaders" video game. In the late 1960s, for example, we saw air pollution and we enacted ambitious legislation designed to scrub the air. At the same time, we also became aware of water problems, so we tried to solve them with an equally ambitious water act. Next, we saw toxic chemicals endangering health, and we passed a sweeping law to control toxic substances. And so it went through the 1970s and 1980s, with drinking water, radiation, hazardous waste, pesticides, indoor pollution, medical wastes, and many other problems. Each deserved attention, to be sure, but each was dealt with separately, in isolation from all the others.

William Reilly, *Why I Propose a National Debate on Risk*, EPA JOURNAL, Mar./Apr., 1991, at 2.

[108] Whether three cars per person represents a sustainable level of consumption is, of course, a separate issue.

cash register does influence levels of consumption indirectly because environmentally harmful goods become more expensive, but this impact operates at the margin.

E. Efficiency, Sufficiency, and Pricing

As the *I=PAT* model demonstrates, to reduce the impacts of consumption in a meaningful manner, both patterns *and* levels of consumption must be addressed.[109] In basic terms, the three options to reduce the environmental impacts of consumption are efficiency, sufficiency, and pricing. Efficiency improvements have little effect on behavior or lifestyle but, rather, reduce impacts through better design and materials use. Efficiency means doing more with less, with no loss of convenience. This is a technological approach and the dominant policy today.[110] It is represented by the variable *T* in the *I=PAT* model.

Such an approach, however, faces a basic problem, for efficiency gains can often lead to a net *increase* in resource consumption.[111] An example from more than 130 years ago demonstrates this point well.[112] William Jevrons, an observer of England's industrial revolution, recognized that over a short period of time, the steam engine had become three times more efficient by producing the same power with one-third the coal. In calculating the total coal consumption, however, he found that it had not similarly decreased. In fact, coal consumption had *increased* ten-fold because the newly-efficient steam engine was now put to many more uses.[113] Thus, unless efficiency gains offset increased levels of consumption, the net result will actually be an increase in total resource consumption. To a large extent, this describes events of the last twenty-five years.[114]

Reducing levels of consumption (the variable A in the *I=PAT* model) is a more direct approach, but more difficult as well. Throughout American history, calls for simpler lives and reduced consumption have been voiced by many different groups, from the Puritans, Quakers, Amish, and

---

109 *See supra* Part II.A.

110 This is often described as "eco-efficiency." Another approach, known as "de-materialization," argues that instead of increasing efficiency of current products, we should replace them with services or entirely different products. This de-materialization of products follows from the recognition that consumers do not want plugs, cords, lamps, and light bulbs; they want light. They do not want oil and electricity; they want heat. As a result, many utilities are employing demand-side management by selling insulation and energy efficient appliances rather than constructing new energy capacity. ROBINS & ROBERTS, *supra* note 12, at 11, 16.

111 William Rees, *More Jobs, Less Damage: A Framework for Sustainability, Growth and Employment*, ALTERNATIVES, Oct./Nov. 1995, *available in* 1995 WL 12056353.

112 WILLIAM JEVRONS, THE COAL QUESTION 140-44 (Augustus M. Kelly ed., 1965) (1865), *discussed in* Rees, *supra* note 111.

113 *Id.* An appropriate modern example would be computers and paper use. Rather than the "paper-free office" many predicted, computers have greatly increased the amount of paper consumption.

114 From 1970 to 1990, average energy intensity fell in OECD countries by 20%, yet total energy consumption grew by 25% and greenhouse gas emissions grew by 15%. ROBINS & ROBERTS, *supra* note 12, at 16-17. Although the economy was 20% more energy efficient overall, the economy's growth led to an absolute increase in energy use.

utopian communities of the 1830s, through the Back-to-the-Land movement in the 1970s, and the Voluntary Simplicity movement today.[115] In similar ways, these movements have questioned our identification of self through consumption. Indeed, a recent poll found that 82% of Americans agree with the phrase, "most of us buy and consume more than we need."[116]

Our views on consumption, however, are deeply ambivalent, for 93% of American teenage girls say shopping is their favorite activity.[117] In a land where consumer is king, there is little place for discussing limits to growth or "how much is enough." Thus, a basic reason the law currently does little to address levels of consumption is that it flies in the face of strongly-held cultural values.

The last option for reducing the impacts of consumption is through pricing. More accurate pricing would reflect resource scarcity and environmental damage, driving up prices of certain goods and services. But this option, proposed in President Clinton's Btu tax, was recently rejected in the United States.[118] The alternative of government rationing seems equally remote because there is no general agreement within the populace that a crisis exists which justifies sacrifice. Moreover, strict government control of resource consumption requires governmental intervention far closer to the policies of former Romanian dictator Nicolai Ceausescu than modern western democracies.[119]

The implication of the preceding discussion is clear: the law is far more effective in changing the technology of consumer goods (patterns of consumption) than the cultural values underlying the consumption of those goods (levels of consumption).[120] Given these theoretical and practical limitations, how should the law evolve to address the impacts of con-

---

[115] *See* Carey Goldberg, *Choosing the Joys of a Simplified Life*, N.Y. TIMES, Sept. 21, 1995, at C-3, *available in* LEXIS, News Library, PAPERS File; Connie Koenenn, *Boomers Buying Into The Simpler Life*, L.A. TIMES, July 25, 1996, at E1, *available in* LEXIS, News Library, PAPERS File. These movements are well described in Henry David Thoreau's counsel, "[a] man is rich in proportion to the things he can afford to let alone." DURNING, *supra* note 9, at 141-44, 150.

[116] *Poll Finds We Feel Guilty All The Way To The Mall*, THE AUSTIN AMERICAN-STATESMAN, Dec. 25, 1996, *available in* LEXIS, News Library, Austin File.

[117] DURNING, *supra* note 9, at 132. The Mall of America in Bloomington, Minnesota, attracts more annual visitors than Mecca or the Vatican. *Id.* at 7.

[118] Andrew R. Klein, *Hazardous Waste Cleanup and Intermediate Landowners: Reexamining the Liability-Based Approach*, 21 HARV. ENVTL. L. REV. 337, 383 (1997).

[119] For example, under President Ceausescu, laws were enacted and regulations issued that restricted abortion and sterilization and prohibited certain forms of contraception. Michaela Wrong, *Women Paid High Price Under Ceausescu Dictatorship*, REUTERS NORTH AMERICAN NEWS, Dec. 29, 1989, *available in* LEXIS, News Library, Reuna File.

[120] This presents a striking parallel with the law's role in controlling population growth, for the legal guarantee of contraception or abortion services is insufficient alone to ensure that population control efforts will succeed. Of equal, if not greater, importance are the status of women within society and other cultural factors. In fact, the most powerful insights for the nascent sustainable consumption debate may well come from the more mature field of population control. *See* PAUL EHRLICH ET AL., THE STORK AND THE PLOW 168 (1995). Viewed another way, the law seems more effective influencing corporate, rather than individual behavior.

sumption effectively? Is there a legal model that is comprehensive, addressing the product's entire lifecycle, and capturing all externalities? Put differently, is there a legal instrument that significantly improves patterns of consumption by placing the law simultaneously at the entrance door, on the product label, and at the cash register? And can this law effectively address levels of consumption?

V. Legal Initiatives to Promote Sustainable Consumption

A. EPR and Packaging Take-Back

A powerful new initiative known as Extended Producer Responsibility (EPR) may hold part of the answer. Best known through a 1991 German law,[121] EPR initiatives are viewed by many in Europe as the most dynamic environmental policy of this decade and are rapidly spreading to other countries.[122]

How do they work? Traditionally, a product's price reflects the producer's costs of manufacture, distribution, and marketing plus a profit margin. Once the product is sold, beyond the realms of traditional warranties and tort liability, the product is out of the sight and mind of the manufacturer. All costs of waste disposal at the end of the lifecycle, for example, are borne by the consumer, generally through municipal taxes. Manufacturers, thus, have had little incentive to reduce the wastes associated with disposal of its products because they have not borne these costs.

EPR laws turn this presumption on its head by extending the producer's responsibility for the environmental impacts of its product *even after the product is sold.* The key to the principle is the *extension* of responsibilities to reduce the environmental impacts of the product. For the producer, this may require working closely with its supplier to obtain renewable resources or forming an alliance with waste handlers to ensure an adequate supply of recycled materials. In all cases it will necessitate creating novel partnerships with other actors in the lifecycle and the development of shared and overlapping responsibilities. As one commentator has described, "[p]roducers accept their responsibility when they design their products to minimize the lifecycle environmental impacts and when they accept legal, physical or economic responsibility for the envi-

---

121 Nigel Foster, German Law and Legal System 150 (1993).

122 Originally developed by Thomas Lindhqvist at the University of Lund in Sweden, EPR is known as Extended Product Responsibility in the United States. While there are some nuanced differences between the European and American principles, for the purposes of this article the acronym EPR refers to both. The President's Council on Sustainable Development sponsored a workshop on EPR on October 21-22, 1996. This was the first government conference ever held on EPR in the United States.

ronmental impacts that cannot be eliminated by design."[123] Two examples of EPR initiatives are bottle bills and advanced disposal fees.[124]

To date, the most aggressive EPR initiative have been product take-back measures which mandate that the producer take back its product or packaging at the time of disposal and valorize it by recycling, re-use, or incineration with energy recovery. In 1991, Germany created the first EPR take-back program by passing the Ordinance on Avoidance of Packaging Waste.[125] It has served as the basic model for all the take-back programs which have followed. In simple terms, the Ordinance's most important provision gave consumers the right to return product packaging to the point of sale.[126] It also required retailers to provide facilities for and accept the consumers' product packaging free of charge.[127] These provisions were unpopular, since retailers faced the dismaying prospect of a growing mountain of trash in front of their stores.

In response to this concern, however, the Ordinance was quite clever. Retailers are exempted from the take-back requirement if their product suppliers create an industry-wide system for collection and recovery of packaging.[128] To qualify for the take-back exemption, the system not only has to collect the packaging, but also must meet material specific quotas for collection and recycling.[129] The collection system is entirely private.

---

[123] Gary A. Davis, *Extended Producer Responsibility: A New Principle for a New Generation of Pollution Prevention*, *in* EXTENDED PRODUCER RESPONSIBILITY: A NEW PRINCIPLE FOR A NEW GENERATION OF POLLUTION PREVENTION, PROCEEDINGS OF THE SYMPOSIUM ON EXTENDED PRODUCER RESPONSIBILITY 1 (Catherine A. Wilt & Gary A. Davis eds., 1995) (symposium held Nov. 14-15, 1994, WASHINGTON, D.C.) [hereinafter EXTENDED PRODUCER RESPONSIBILITY: A NEW PRINCIPLE].

[124] Bottle bills are currently in place in 10 states. This model of shared responsibility among wholesalers and retailers ensures the market for reusable bottles, reduces litter, and provides a steady supply for recycling. Interview with Jim McCarthy, Congressional Research Service, Library of Congress (Sept. 3, 1996).

Other EPR initiatives which are not legal mandates include manufacturer partnerships with timber suppliers to ensure sustainably harvested timber, partnerships with waste processors to ensure a supply of recycled materials, or partnerships with customers to ensure the products are used in an environmentally-sensitive manner (e.g., industrial cleaning products).

[125] The law is known in Germany as the *Verpackungsverordnung*. In its original form, the Ordinance provided for compulsory deposits on the packaging of detergents, cleaning agents, beverages, and latex paints. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, PHASE 1 REPORT, EXTENDED PRODUCER RESPONSIBILITY IN THE OECD AREA 54 (1996) [hereinafter PHASE 1 REPORT] (on file with author). Its most important requirements were directed at transit, secondary, and sales packaging. *Id.* at 70. The pioneering role of the Ordinance is remarkably similar to Germany's Blue Angel eco-labeling program. James Salzman, ENVIRONMENTAL LABELING IN OECD COUNTRIES 43 (1991). Created in 1978, the Blue Angel served as the model for all subsequent labeling programs around the globe. *Id.* Over 30 countries now have private or government-sponsored labeling programs. *Id.*

[126] PHASE 1 REPORT, *supra* note 125, at 54. Primary packaging constitutes over 70% of total packaging. GARBAGE AND THE GREEN DOT, *supra* note 63, at 19.

[127] PHASE 1 REPORT, *supra* note 125, at 54.

[128] *Id.*

[129] Bette Fishbein, *Challenging the Throwaway Society: An Update on Germany's Packaging Laws*, *in* EXTENDED PRODUCER RESPONSIBILITY: A NEW PRINCIPLE, *supra* note 123 [hereinafter *Challenging the Throwaway Society*]. For each material, separate collection and

Not surprisingly, German retailers immediately embraced this exemption, informing suppliers that if their product packaging was not covered by an industry-wide collection system, the products would not be given shelf space in the store.[130]

In essence, this is all the law requires. There are no mandates on how the system must operate, who pays for its operation, or who operates it. There are no incentives or requirements for end markets of the collected waste. The Ordinance simply requires retailers to accept product packaging, provides an exemption for a collection system with specific goals to meet, and everything else follows.[131]

In response to the retailers' threat, as the law had anticipated, German companies established a number of private joint ventures. The largest was Duales System Deutschland (DSD). DSD is responsible for collecting packaging waste and arranging for its disposal, primarily through recycling.[132] Any company selling goods in Germany may pay a fee to DSD based on the total weight of packaging it sells, the material involved, and the volume of packaging.[133] If the packaging meets DSD's requirements for recyclability, then the qualifying product is granted a license to place the company's green dot trademark on its package.[134] This mark signifies to retailers and consumers that the package is recyclable and managed by DSD after disposal.

B. Impacts in the Marketplace

The key to the German program in environmental terms, beyond the collection and recycling goals, is the fee schedule. DSD charges differential fees by material.[135] Thus, the fee for plastic is more than seven times more expensive per kilo than that of cardboard because plastic is much

---

recycling rates were set through 1995. The total recycling rates for individual packaging materials were as follows: glass (72%), tinplate (72%), aluminum (72%), plastic (64%), paper/carton (64%), and composite (64%). *Id.* The actual recycling rate in 1993 for plastic was 29%. *Id.*

130 *Id.*

131 Take-back programs are more formally known as "reverse channel networks." For a detailed analysis of their operation, see Donald Fuller et al., *Materials Recycling and Reverse Channel Networks: The Public Policy Challenge*, J. OF MACROMARKETING, Spring 1996, at 52, *available in* LEXIS, News Library, Mags File.

132 Originally, the German program did not permit incineration of the collected waste, leading to a huge stockpile of collected waste with no domestic disposal options. *See* Ann Kulik, *German Waste Disposal Evolves Under New Laws*, WORLD WASTES, Sept. 1993, at 16, *available in* LEXIS, News Library, Mags File; *Has Germany Bitten Off More Than It Can Chew?*, PACKAGING WK., Apr. 8, 1993, at 22, *available in* LEXIS, News Library, Mags File [hereinafter *Has Germany Bitten Off More than It Can Chew?*]. The program later permitted incineration only for the residues which have been collected but which are not suitable for recycling. *Id.*

133 *Id.*

134 *See id.*; E. Gifford Stack, *Green Dot Not for U.S.: Germany's Packaging Law Doesn't Make Sense Here*, BEVERAGE INDUSTRY, Sept. 1993, at 50, *available in* LEXIS, News Library, Mags File.

135 *Has Germany Bitten Off More Than It Can Chew?*, *supra* note 132.

more difficult for DSD to recycle.[136] Consumers still pay for the waste collection and treatment of packaging, but they now do so through the product price rather than through taxes. The price differential arising from collection and treatment of different packaging materials is now seen on the store shelf.[137]

Not only does this send more accurate environmental price signals, but it also alters the competitive structure. Indeed, the business consequences of such a program are clear. If a company currently sells its goods in plastic packaging, it will have a strong incentive to reduce the weight of its packaging and to shift its packaging to a cheaper (i.e., easier for DSD to recycle) material.[138] If a company's packaging is not deemed recyclable by DSD it will have to change its packaging entirely or find another arrangement for collection and recycling.[139]

By extending the producer's responsibility to the product's disposal (its post-consumer life), issues previously outside the business calculus become of paramount importance. Because a producer knows it will have to bear the cost of collecting and valorizing the product, it must manage a new set of business matters. Can the packaging be lightweighted? Are the materials all recyclable? Is the product designed for reuse or for disassembly? In short, beyond internalizing environmental costs in the product price and producing more accurate marketplace signals, EPR take-back programs introduce a new competitive dynamic where management of the post-consumer life of the product contributes to a company's bottom line as significantly as traditional manufacturing and distribution concerns.

If a company can manage the take-back and valorization of its products more cheaply than others through such innovations as packaging design, it gains a competitive advantage. As a result of this dynamic, a stroll through a German supermarket today shows a far different shelf than just five years ago. There are more concentrated products, lightweight bottles, refills, and far less outer packaging and plastic than before.[140] Toothpaste, for example, is no longer sold with an outer carton.[141]

---

136 *Id.* The 1993 fee for plastic, for example, was 2.61 Deutschmark per kilogram. The fees for paper and glass are 0.33 DM/kg and 0.16 DM/kg respectively. *Id.* Some later programs, such as Eco-Emballage in France, charge fees solely based on weight and not material type. Pan Demetrakakes, *European Packaging Laws: A Pandora's Box; Laws are Complex and Compliance is Costly*, Packaging, Feb. 1993, *available in* 1993 WL 3185648.

137 For a thoughtful consideration of pricing issues and solid waste management, see Peter S. Menell, *Beyond the Throwaway Society: An Incentive Approach to Regulating Municipal Solid Waste*, 17 ECOLOGY L.Q. 655 (1990). Published before the introduction of Germany's Packaging Ordinance, Professor Menell's article includes a recommendation for a charge levied by municipalities at the retail point of sale which would incorporate the product's disposal costs. *Id.* at 659, 727. Such a charge would be determined by the government on the basis of a database and, if properly set, could have a similar impact to take-back programs. *Id.* at 727.

138 Having worked for a large multinational consumer products company from 1992-1995, the author participated in complete reviews of product packaging in reaction to the take-back programs' fees.

139 Menell, *supra* note 137, at 727.

140 GARBAGE AND THE GREEN DOT, *supra* note 63, at 42-46.

141 *Id.*

The policy goals of EPR packaging programs are straightforward. An obvious goal is the diversion of solid waste from landfills. In most OECD countries, packaging represents a significant percentage of municipal solid waste.[142] By mandating a high percentage for collection and valorization, packaging take-back laws successfully divert the solid waste from landfills to recycling facilities or incinerators with energy generation.[143]

The other goals of EPR take-back laws, however, are much more significant over the long term. These additional goals include: 1) encouraging companies to *design* for reuse, recyclability, and materials reduction, 2) *correcting market signals* to the consumer by incorporating waste management costs into the product price, and 3) driving *technological innovation* to recover and reuse materials destined for disposal.[144] As discussed above, only when consumers pay the full environmental price for a product and the market signals are accurate will consumers' purchases reflect environmentally rational behavior.

EPR may also be described as an extension of the "polluter pays" principle.[145] This principle traditionally justifies economic charges for pollution during production. Similarly, when the manufacturer places the product on the market, it must also pay for the costs of the product's eventual disposal when the product becomes a pollutant. Thus, consumers still pay for waste management of packaging, but the costs have been shifted from taxes and the public purse to product prices.[146]

Since the launch of the German packaging take-back program, the principle of EPR has been adopted throughout Western Europe and is literally sweeping the globe. Take-back programs for packaging have been created in France, Belgium, Sweden, Austria, Japan, and other countries.[147] Most programs provide for industry-wide exemptions to individ-

---

142 In Germany, product packaging accounts for 50% of municipal solid waste by volume, 30% by weight, and 70% of the waste packaging goes to landfill. *Id.* at 20. In Paris, as well, paper, glass, metal, and plastic account for over 60% of municipal solid waste. James E. McCarthy, *Recycling and Reducing Packaging Waste: How the United States Compares to Other Countries*, 8 RESOURCES CONSERVATION & RECYCLING 293, 301 (1993).

143 In 1993, for instance, Austria reported recycling over 400,000 tons of packaging waste as result of its take-back program. PHASE 1 REPORT, *supra* note 125, at 9. Germany had similarly dramatic results. The total weight of its product packaging was reduced by 661,000 metric tons from 1992 to 1991, representing a 4% reduction at a time of economic growth. GARBAGE AND THE GREEN DOT, *supra* note 63, at 71-73. DSD claims that from 1991 to 1995, total secondary packaging was reduced by 80% while total consumption was projected to all by approximately 970,000 metric tons. *Id.* at 43, 72-73.

144 PHASE 1 REPORT, *supra* note 125, at 8.

145 *See* POLLUTER PAYS PRINCIPLE, *supra* note 67, and accompanying text.

146 Some have challenged this application of the principle by questioning who the polluter really is. In the case of packaging, for instance, is the polluter the manufacturer who places the packaging on the market, or the consumer who discards the packaging? While consumers clearly bear important responsibility in reducing the impacts of consumption, clearly the single actor most able to reduce the product's impacts in this case would be the producer through its design and choice of materials. For a more general discussion, see Gary A. Davis, *Extended Producer Responsibility: A New Principle for a New Generation of Pollution Prevention*, *in* EXTENDED PRODUCER RESPONSIBILITY: A NEW PRINCIPLE, *supra* note 123.

147 In addition to the German Packaging Ordinance, relevant European legislation includes the following: the French Law 92-646 of 13 July 1992, Chapter 10 of the Dutch Envi-

ual take-back requirements if a private organization collects on their behalf. The EU has also passed a Packaging Directive, requiring take-back throughout most of the Union by 2001.[148] In total, ten OECD member countries have laws on the books providing authority for take-back programs, four other OECD countries have laws covering specific product categories or regions, and four more are developing national legislation.[149]

C. Beyond Packaging

While many commentators have recognized the significance of the EPR packaging laws, they have made a fundamental error in describing these laws simply as recycling initiatives.[150]

---

ronmental Management Act of 1993, the Austrian Waste Management act of 1990, and the Swedish Eco-Cycle Bill, as well as other initiatives. *See* PHASE 1 REPORT, *supra* note 125, at 42-47.

In Canada, the National Packaging Protocol calls for a 50% reduction of packaging sent for disposal by the year 2000. *Id.* at 65.

In Asia, both Japan and Korea have laws on the books which would permit EPR take-back programs. *See* Hideshi Kurasaka, *Extended Producer Responsibility in Asia*, *in* EXTENDED PRODUCER RESPONSIBILITY: A NEW PRINCIPLE, *supra* note 123 (discussing Article 8 of the Japanese Environment Basic Law of 1993 and Article 32 of the Korean Waste Disposal Law of 1991).

One important difference between the German program and some that have followed it is the principle of "valorisation." The German program relies almost entirely on recycling or reuse, allowing incineration with energy recovery (also known as co-generation) in only limited circumstances. *See Challenging the Throwaway Society*, *supra* note 129, at 20. The French program, however, equates recycling with waste-to-energy incineration. PHASE 1 REPORT, *supra* note 125, at 68. This has important consequences for materials such as plastic, which have high calorific content but few sites with large recycling capacity. *See* Kulik, *supra* note 132.

In Germany, another bill known as the *Kreislaufwirtschaftgesetz* provides authority to develop take-back regulations for other product categories. *Challenging the Throwaway Society*, *supra* note 129, at 19. Thus, Germany will likely remain in the lead on this issue.

[148] *Environment: Packaging Waste Directive Finally Adopted*, MULTINATIONAL SERVICE, Jan. 5, 1995, *available in* LEXIS, News Library, Mulsrv File. The EU Directive mandates valorization of packaging at a minimum level of 50% and a maximum level of 65% by 2001. *Id.* Packaging recycling rates must be between 25% and 45%, with a minimum of 15% for each material. *Id.* If a country wishes to exceed the 45% maximum recycling level, it must petition the European Commission and demonstrate that this higher level will not disrupt the Internal Market (i.e., the country has sufficient internal recycling capacity). *Id.* In order to comply with the Packaging Directive, nations will need to enact take-back legislation over the next five years. *Id.*

[149] PHASE 1 REPORT, *supra* note 125, at 8.

[150] Nicholas Basta, et al., *Prime Time for Postconsumer Recycling*, CHEMICAL ENGINEERING Feb. 1995, at 31, *available in* LEXIS, News Library, Chemen File; *see also Former EPA Official Says U.S. Should Not Follow Strict European System*, Int'l Env't Daily (BNA) (May 6, 1994), *available in* LEXIS, BNA Library, BNAEVR File; Steven P. Reynolds, *The German Recycling Experiment and its Lessons for United States Policy*, 6 VILL. ENVTL. L. J. 43 (1995). These commentators have argued that since the U.S. has high levels of recycling, EPR take-back laws are unnecessary. Indeed, U.S. recycling of municipal solid waste has more than doubled since the 1980s. Nicholas Basta, et al., *Prime Time for Postconsumer Recycling*, CHEMICAL ENGINEERING, Feb. 1995, at 31, *available in* LEXIS, News Library, Chemen File. Current rates of municipal solid waste (MSW) recycling in the U.S. hover around 22% to 23%. *Former EPA Official Says U.S. Should Not Follow Strict European*

The reach of EPR packaging laws beyond Germany is significant, but far more important has been the extension of EPR laws to other product categories. Indeed, take-back initiatives have been formally proposed or implemented in over half the OECD member countries for products other than packaging.[151] Germany, Sweden, and the Netherlands are developing full-scale take-back programs for cars.[152] They and other countries such as Norway and Switzerland are developing regulations requiring EPR take-back requirements for electronics, tires, major appliances, batteries, furniture, and other categories.[153] As a result, product manufacturers are fundamentally reexamining their designs.

At their heart, EPR laws are *design* initiatives that create new institutional partnerships throughout the lifecycle of a product resulting in the potential to significantly reduce impacts from consumption. A typical car dashboard, for example, contains more than twenty types of plastic. These were originally chosen for cost and other design requirements, but certainly not for their reusability or recyclability.[154] Today, by contrast, manufacturers like Volkswagen, General Motors, and BMW are explicitly "designing for disassembly." As a result, new car dashboards may soon

---

System, Int'l Env't Daily (BNA) (May 6, 1994), *available in* LEXIS, BNA Library, BNAEVR File.

151 *See id.* at 9.

152 *Id.* at 54, 56, 58. The German Environment Ministry intends to introduce the program in 1998. *German Ministries Spar Over Automobile Recycling Schemes*, BUS. & THE ENV'T, Aug. 1994, *available in* 1994 WL 2504923.

153 PHASE 1 REPORT, *supra* note 125, at 50-59. Germany has passed a law known as the Product Recycling and Waste Management Act (*Kreislaufwirtschafts-und Abfallgesetz*) which provides the government authority to impose take-back requirements on other product categories simply by promulgating regulations. GARBAGE AND THE GREEN DOT, *supra* note 63, at 131. Its general requirement is that "whoever produces, markets and consumes goods is responsible for the avoidance, recycling, reuse, and environmentally sound disposal of the waste which thereby arises." *Challenging the Throwaway Society*, *supra* note 129, at 19. Sweden's Eco-Cycle Bill provides similar sweeping authority to promulgate take-back requirements. *See* PHASE 1 REPORT, *supra* note 125, at 47.

Germany, France, Denmark, Norway, Sweden, Austria, and the Netherlands all have electronics take-back initiatives or laws under formal consideration. Rod Hunter, *European Electrical and Electronic Product Take-Back Regulation*, 18 Int'l. Env't. Rep. (BNA) No. 12 at 480 (June 14, 1995), *available in* LEXIS, BNA Library, BNAEVR. As a result, in Germany, major computer manufacturers already offer take-back schemes. Geoff Nairn, *Business and the Environment: EU's Electronic Mountain - Negotiations on the Best Fate for Discarded Equipment in Europe are Growing More Urgent*, FIN. TIMES (LONDON), Nov. 9, 1994, *available in* LEXIS, News Library, Fintme File. Other major manufacturers such as Deutsche Telekom and Siemens have formed a recycling consortium. *Id.* Electronic waste makes up 4% of Germany's solid waste. GARBAGE AND THE GREEN DOT, *supra* note 63, at 141. For a general discussion of the problem of electronic waste, see *id.* at 141, 143-46.

One of the great challenges these programs will face is how to finance the collection of electronic products currently on the market which were not designed for take-back. For all these product categories, cost-effectiveness of reuse and remanufacturing depends critically on product design, for the longer time spent taking a product apart for its valuable parts, the higher the labor costs.

154 *See* Lovins & Lovins, *supra* note 10. The amount of resources associated with cars are staggering. In the United States, cars consume roughly 70% of the lead, 60% of the rubber, 15% of the aluminum, and 13% of the steel produced in the country each year. *Id.*

contain only two or three different plastics and be designed for recycling and reuse.[155] Materials will be coded for rapid identification and parts will be attached in the plant for easy disassembly later. In order to achieve this, the manufacturer and dismantler must develop a new partnership that will permit the car to be designed *for* dismantling. And it is the design that is crucial, for it is at that stage that nearly three-quarters of the total product costs are fixed.[156]

The long-term implications of EPR take-back programs are profound. If broadly extended to more durable product categories, these laws will effectively transform the consumer product market into a *leasing* economy. In practical terms, there is little difference between leasing a car and mandating the manufacturer through EPR to reclaim the car at the end of its life. In both cases, the manufacturer knows it must take back its product upon disposal. If this occurs on a large scale, it has direct impacts on product design. Indeed, knowing the product will return, the manufacturer would be foolish *not* to consider designing for potential reuse and recycling, with a consequence of reduced environmental impacts throughout the product's lifecycle.

Despite their simplicity, if EPR take-back laws extend around the globe and encompass more and more products, they will have enormous influence. Given their expanding influence and novelty as a legal model to reduce the impacts of consumption, it is important to examine these laws at a doctrinal level. Do they represent good policy? Do they represent good law?

VI. DOCTRINAL ANALYSIS

A. The Least-Cost Avoider

In terms of legal doctrine, take-back laws may be loosely described as transforming the manufacturer's legal relationship with its product by imposing a future property interest which vests upon disposal. In fact, it is only the responsibility to manage the product's disposal that vests, not actual legal title or, consequently, liability. As we have seen, however, this simple extension of responsibility has important consequences. One way to evaluate EPR's transfer of rights as sound policy is through Calabresi

---

[155] Personal Communication with Terry Cullum, General Motors (Oct. 21, 1996). A trade magazine has described the situation as follows:

> Driven by the durables-recycling regulations in Europe and by the heat-up of the solid-waste issue here, U.S. carmakers are ramping up their efforts to build "more environmentally responsible" vehicles. Their goal is to substantially reduce, if not eliminate the amount of plastics that goes to landfills from scrapped vehicle [sic]. To do this, they are developing design and material strategies that will make it easier to remove, identify and recover the plastics.

Bernie Miller, *Recycling: What the Big 3 Say*, PLASTICS WORLD, Oct. 1993, at 32, *available in* 1993 WL 3185985.

[156] IMPROVING ENGINEERING DESIGN, *supra* note 59, at 7-8.

and Melamed's classic treatment of property and liability rules.[157] Their analysis seeks to minimize social costs by allocating the expense of undesirable activities on the "least-cost avoider."[158]

At the moment, local government is largely responsible for waste disposal. If one starts from first principles, however, and seeks to reduce total solid waste and the use of virgin materials throughout a product's lifecycle, *who* should be given responsibility for waste disposal? Who is the least cost avoider, government or the producer?

Government can achieve the goals indirectly through product-specific laws and regulations. Part II of this article described a number of these, such as product content laws and weight-based disposal fees.[159] Waste collection is funded through taxes or product-specific levies such as advanced disposal fees. While these policy instruments may be effective in influencing consumer behavior by encouraging the return of bottles for the five cent deposit, for example, they have little effect on the manufacturer. Beyond being made of a recyclable material, which is likely in any case, the design of a can or bottle will not change because of bottle bills. Product content laws and disposal fees insulate industry's bottom line from the waste disposal costs of its products. Thus it has no direct incentive to reduce the environmental or price impacts of disposal.

By contrast, manufacturers can achieve the goal of waste minimization and reduced use of virgin materials directly through product design. More important, they also can control both upstream activities (in the purchase of raw materials) and downstream activities (through waste handlers).[160] Here the waste treatment costs are funded through the product prices.

The public ends up paying in both cases, but which allocation results in the least cost to society? Government responsibility provides little incentive for manufacturers to reduce the disposal impacts of their products. In contrast, industry responsibility through take-back laws provides an incentive for each producer to manage the end of the product's lifecycle as efficiently as its manufacture and distribution. Because those

---

157 Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972) (referring to Calabresi's earlier work, THE COST OF ACCIDENTS 24-33 (1970)).

158 In the context of liability rules, their article argues that

> in the absence of certainty as to whether a benefit is worth its costs to society . . . the cost should be put on the party or activity best located to make such a cost-benefit analysis . . . in particular contexts like accidents or pollution this suggests putting costs on the party or activity which can most cheaply avoid them . . . in the absence of certainty as to who that party or activity is, the costs should be put on the party or activity which can with the lowest transaction costs act in the market to correct an error in entitlements by inducing the party who can avoid social costs most cheaply to do so . . . .

Id. at 1096-97.

159 *See supra* notes 71-104 and accompanying text.

160 McDonald's, for example, has purchased over $1 billion of products made from recycled materials. *McDonald's Makes $1 Billion in Recycled Purchases*, BUS. & THE ENV'T, Feb. 1995, *available in* 1995 WL 8380332.

costs are reflected in the shelf price, industry now has both a direct incentive to reduce the disposal costs of its products and the *means* to do so through control over design and the creation of partnerships upstream and downstream.

The preceding analysis suggests that industry is better placed as the least-cost avoider and that EPR take-back programs minimize social costs. Indeed, there is no obvious reason why government rather than industry *should* manage waste disposal. The ultimate decision would require empirical analysis of the infrastructure and transaction costs but, at a theoretical level, getting government out of the waste business could be beneficial.[161]

In comparison with most current consumption laws and policies, the comprehensive nature of EPR take-back laws offers significant advantages. In keeping with the earlier structure of the supermarket metaphor, they place government at the door by requiring that in order for a product to be allowed on the shelf, producers must take responsibility for its disposal fate. They place government on the shelf by ensuring consumers that products will be managed responsibly upon disposal as the DSD green dot in Germany shows. And they place government at the cash register by incorporating disposal costs in the product price.

Despite its strengths as a policy to promote sustainable consumption, however, EPR can be criticized on at least three points. First, the German program, in particular, has encountered enormous financial difficulties. The Ordinance's collection and recycling quotas proved unrealistically high, particularly for plastics.[162] In 1993, DSD had negotiated contracts to recycle 60,000 tons of waste plastic in Germany.[163] Its collection proved too successful, however, for DSD gathered over 400,000 tons of plastic packaging.[164] This led to stories, perhaps apocryphal, that the DSD had collected enough plastic in its first year to line every autobahn in Germany with plastic benches.[165]

Because the Ordinance required 80% of the total plastic collected to be recycled, this far exceeded the German recycling capacity and much of the waste plastic was sent abroad as far as Asia for recycling at low or no

---

[161] A more complete analysis would, of course, require assessing the benefits of resource and landfill conservation. While they clearly are worthwhile goals, their achievement must be weighed against the environmental impacts of collecting and transporting the waste, recycling, and re-use, as well as the added economic costs. As discussed above, only case-by-case analysis will determine whether a take-back requirement will result in net environmental benefit.

[162] Only 3.8% of plastic packaging wastes were recycled in 1992, compared to the Ordinance's 1993 requirement of 9%. GARBAGE AND THE GREEN DOT, *supra* note 63, at 100. In 1995, a 64% level was mandated. *Id.*

[163] *Id.* at 102.

[164] *Id.* at 101.

[165] This story was presented by a number of participants at the OECD Workshop on Lifecycle Management and Trade, July 21, 1993. To help DSD out of its financial problems, the Environment Ministry "converted" $384 million in debt into long-term loans. *Packaging: U.S. Policy Makers Should Look to Germany for Packaging Regs, Says INFORM*, INTEGRATED WASTE MGMT., Feb. 1994, at 4, *available in* 1994 WL 2254932.

cost.[166] This dumping drove down the price of waste plastic in those countries, hurting local collection and recycling schemes.[167] The program also faced the problem of free riders, as 90% of product packages showed the green dot but only about 50%-60% had paid the fee.[168]

Second, in retrospect the German program suffered from unrealistically high goals and single-minded emphasis on recycling. Indeed, EPR poses a real danger if take-back programs mandate recycling or reuse for its own sake. Since recycling and remanufacturing have environmental impacts and costs of their own, for some sectors and countries a take-back program may not need recycling targets or take-back may simply be inappropriate.

Subsequent packaging take-back laws have benefited from these errors, providing for less expensive collection structures and more flexibility on final disposal and recovery of collected waste.[169] While still in their infancy, these programs appear to be avoiding the economic inefficiencies that plagued DSD. Hence, the financial problems may derive more from Germany's role as a pioneer in implementation of take-back laws than inherent shortcomings of EPR policies. At a minimum, take-back should not be a goal in itself but, rather, it should serve as a means to reduce total environmental impacts in a cost-effective manner.

Third, and a more fundamental criticism, EPR take-back laws do not address levels of consumption. As discussed at the end of Part IV in reference to other consumption laws, take-back laws may promote better design, reuse, and recycling of products, or how *well* we consume, but they have little impact on how *much* we consume. As a result of these laws, for example, German consumers will likely purchase products with less packaging than before, but they still may purchase more packaging than is sustainable over the long term. This is a critical shortcoming of most consumption laws.

---

166 GARBAGE AND THE GREEN DOT, *supra* note 63, at 109, 122. The final destination of German waste ranged from landfills in France to sites in Jakarta and Singapore. *Id.*

167 Ariane Genillard, *Recycling Has Neighbours Crying Foul - Complaints of Cheap Waste Exports to European Countries*, FIN. TIMES (LONDON), Jan. 25, 1994, at 6, *available in* LEXIS, News Library, Fintme File.

168 GARBAGE AND THE GREEN DOT, *supra* note 63, at 60, 173.

169 Roger Cowe, *Trying to Keep the Lid on Recycling Boom*, THE GUARDIAN (LONDON), Oct. 30, 1993, at 40, *available in* LEXIS, News Library, Guardn File. It is ironic, since the German program served as the spur for the rush of take-back laws, that in retrospect packaging probably was a poor choice for take-back because the economic benefits of large-scale collection are limited. Packaging is a low-cost generic commodity in that it has little intrinsic worth, so it offers few opportunities for economical reuse. It can be a valuable fuel source for co-generation, but in that case there is no advantage in having industry collect the packaging. Whether the economic costs justify the environmental benefits in the case of packaging remains an open question. In contrast, a complex product like a car or white good has real intrinsic value at the end of its life and may provide clear economic benefit through its collection and re-use.

B. Legal Issues

EPR take-back laws will certainly have implications beyond environmental law. This section examines their legal status in the context of international trade and U.S. antitrust and hazardous waste laws. In particular, three questions arise: 1) do take-back programs conflict with international trade or domestic hazardous waste and anti-trust laws, 2) if there are conflicts, under what circumstances do they arise, and 3) how can such legal conflicts be avoided?

1. International Trade Law

While EPR take-back programs have important differences in terms of financing, collection percentages, and recycling/incineration/reuse options, for the purposes of trade law analysis all programs share three critical points. First, no program explicitly discriminates against imports. All goods sold in the country are subject to the take-back requirement, regardless of origin. In Germany, for example, the distributor of a foreign product shares the same responsibilities as a local German producer.[170] Second, participation in private systems is voluntary. While the costs of individual take-back may be commercially unacceptable to some companies, legally they have the option of taking back their own packaging or products.

Third, most of the decisions directly affecting producers are made by the private collection organizations, not the government. To illustrate, the government in Germany mandates individual take-back responsibilities and sets overall material collection and recovery rates for private collection systems, but it is the DSD that defines "recyclable" packaging and sets the tariffs for inclusion in its program.[171] Thus DSD decides which packaging types it will collect and how much it will charge for its services, not the government. This is particularly important when the private collection organization acts as a monopoly because private decisions effectively take on the force of national law. When take-back programs do act as protectionist barriers, it is often as a result of a private party's actions rather than those of the government. Nonetheless, the German Ordinance has been legally challenged within the European Union.[172] While no take-back programs are currently in obvious violation of World Trade Organization

---

[170] GARBAGE AND THE GREEN DOT, *supra* note 63, at 163-64.

[171] *Id.* at 51-52, 61.

[172] Legal challenges against the German Ordinance on Packaging have been filed with the European Commission by a number of industry groups, including the United Kingdom Industry Council for Packaging and the Environment. *Id.* at 121-23. These groups contend that the Ordinance disrupts the Internal Market. *Id.* The EU Commission filed a formal complaint against the German take-back legislation in December, 1995, charging that the Ordinance imposes quantitative restrictions on trade between member States, violating Article 30 of the European Union Treaty. *Packaging Waste: Commission Challenges German System*, EUROPE ENV'T, Jan. 23, 1996, *available in* LEXIS, News Library, Eurenv File. The dispute resolution procedure is still underway.

(WTO) disciplines, three areas pose potential conflicts. These areas are dumping, de facto discrimination, and private action.[173]

Dumping problems arise when the law requires a high level of collection and recovery but the country has insufficient recycling capacity. Germany confronted this problem immediately with plastic, paper, and carton board. As described above, DSD quickly recovered far more plastic than it had anticipated and, more importantly, far more than could be recycled in Germany.[174] Mandated by law to recycle most of this collected plastic, DSD pushed much of the excess onto the international market at low or no cost to regions as distant as the Pacific Rim.[175] While a welcome boon to reprocessing facilities, the flooding of markets with cheap recyclate harmed local recycling schemes. Much of the income supporting recycling programs is generated by sales of collected recyclate to reprocessors. With sorted plastic and paper offered for little or nothing, re-processors turned away from local recycling organizations, denying them a substantial stream of income.[176]

The General Agreement on Tariffs and Trade (GATT), Article VI, permits anti-dumping and countervailing duties when below-value sales from another country cause, or threaten to cause, material injury to domestic industry.[177] In response to dumping, Article VI allows the injured country to raise a countervailing duty on the imported product.[178] The duty is calibrated to the "margin of dumping" which restores the price to its level prior to lowering or subsidization.[179] This would appear to cover DSD's exports, though it is unclear how Article VI should apply.[180] This charge

---

[173] *See generally*, JAMES SALZMAN, EXTENDED PRODUCER RESPONSIBILITY TAKE BACK PROGRAMMES AND INTERNATIONAL TRADE LAW, OECD REPORT TO THE WASTE MANAGEMENT POLICY GROUP 21 (1996).

[174] *See supra* notes 157-58 and accompanying text.

[175] Christopher Boerner & Kenneth Chilton, *Making Recycling More Effective*, USA TODAY MAG., May, 1994, at 78.

[176] GARBAGE AND THE GREEN DOT, supra note 63, at 123-24. In Britain, prices for waste plastic film fell from $180 to $0 in 18 months. Sonia Purnell, *Germany's Waste-Size Problem*, THE DAILY TELEGRAPH (LONDON), Mar. 23, 1993, *available in* LEXIS, News Library, Telegr File. Plastic waste imported primarily from Germany rose 450% from 1991-92. Emma Chynoweth, *Germany's Waste Policy Draws More Complaints*, CHEMICAL WK., May 12, 1993, *available in* LEXIS, News Library, Chemwk File.

[177] General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. pt. 5, T.I.A.S. 1700, 55 U.N.T.S. 194; Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, pt. 1, Marrakesh Agreement Establishing the World Trade Organization [hereinafter WTO Agreement], Annex 1A, *reprinted in* LAW AND PRACTICE OF THE WORLD TRADE ORGANIZATION, Booklet 1, at 167 (Joseph F. Dennin ed., 1997). A threshold question, not yet addressed by the WTO, is whether a municipality's recycling program would be considered "domestic industry."

[178] *Id.*

[179] *Id.* at pt. 1, art. 9.1.

[180] DSD sold its waste plastic at low or no cost in both Germany *and* abroad. *Has Germany Bitten Off More Than It Can Chew?*, *supra* note 132. Thus, strictly speaking there was no subsidization by the government or predatory pricing *in order to* gain an edge in foreign markets. DSD was simply trying to get the plastic off its hands, eventually by selling it for less than its collection costs. *Id.* Hence, any countervailing duty would be a false inflation of prices because the international market price truly did reflect the glut of German

was strenuously denied by Germany's Environment Secretary, Clement Stroetmann, who claimed the Ordinance would not be used for economic protectionism.[181] As a result of the publicity surrounding Germany's experience with collected plastics, however, future dumping problems appear unlikely.[182]

A more likely challenge would contend that take-back programs violate trade laws through discriminatory impact on foreign goods. Most GATT challenges to environmental measures have involved *de jure* discrimination, cases where the law openly treats foreign products differently.[183] Take-back laws fall into a different category, however, because they do not facially discriminate against foreign goods. Absent open discrimination, countries can still challenge take-back laws before the WTO by relying on discriminatory impact, or *de facto* discrimination.[184] This avenue of challenge is important because otherwise a clever legislature

---

plastic recyclate. Dumping did not occur to secure a competitive edge but, rather, to comply with take-back laws which forbade incineration. *Id.* While the GATT would probably treat waste as a product, it is important to note that the GATT rules were designed for trade in valuable products and commodities, not waste, and their application in this context seems particularly inapt.

A local variant to dumping, expressed as an industry subsidy, is also worth examining. The precondition for take-back programs' dumping is a glutted local market. One result of this recycling saturation is a benefit for local companies as a result of a cheap, large, stable supply of recyclate. As one British paper manufacturer has argued, as a result of the German Packaging Ordinance, "German paper manufacturers [are] able to obtain used paper for recycling at zero or negative cost while British mills [have] to pay about GBP 30 to 40 per metric ton (US $45 to $60 per ton) for quality waste paper." *German, EC Packaging Measures Will Hurt U.K. Industry, House of Commons Panel Told*, 16 Int'l Env't Rep. (BNA) No. 4, at 124 (Feb. 24, 1993), *available in* LEXIS, BNA Library, BNAEVR File. The take-back program, thus, operates as an elaborate indirect subsidy for local industry, giving them a competitive edge on the international market in products with recycled content. If this were a standard case of national subsidy where the government paid the industry, for example, to purchase waste paper, the Uruguay Round's Agreement on Subsidies and Countervailing Measures would clearly apply. Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, pt. 1, art. 1, 3, WTO Agreement, *supra* note 177, Annex 1A, *reprinted in* LAW AND PRACTICE OF THE WORLD TRADE ORGANIZATION, TREATIES VOL. 1, Booklet 1, at 271 (Joseph F. Dennin ed., 1997). Take-back laws do not fit neatly into the Agreement's proscribed activities, however, because the government's role is indirect. While take-back laws (or government-forced voluntary agreements) require companies to take back their goods and valorise them, it is the local consumer who pays for it all through higher product prices. The government pays no money to industry through subsidies, tax credits, or other fiscal measures. Looking to analogous situations, the question of whether unemployment programs, job training, and disaster assistance programs qualify as Article VI subsidies remains untested. Hence, the indirect subsidy through take-back regulations to local industry of cheap recyclate probably is not countervailable. *See also* Shane Spradlin, *The Aircraft Subsidies Dispute in the GATT's Uruguay Round*, 60 J. AIR L. & COMM. 1191 (1995).

181 GARBAGE AND THE GREEN DOT, *supra* note 63, at 121-22.

182 The E.U. Packaging Directive explicitly prohibits operation of packaging take-back programs with a recycling requirement above 45% unless the country has domestic recycling capacity to handle the excess amount without distorting the Internal Market. *Environment: Packaging Waste Directive Finally Adopted*, *supra* note 148.

183 *See generally* ESTY, *supra* note 79, at 265-70.

184 Agreement on Subsidies and Countervailing Measures, *supra* note 180, at art. 3.1(a).

could simply erect protectionist barriers under the guise of evenhanded treatment.

To argue de facto discrimination, a country must show evidence of discriminatory impact.[185] To date, foreign companies have alleged two basic types of injuries against take-back programs: added costs and inferior bargaining power.[186] Since foreign manufacturers will rarely purchase their packaging materials from local packaging suppliers, they have much less leverage than local companies for bargaining.

The leading GATT precedent holds that facially neutral measures can violate Article III through *de facto* discrimination, but only upon a showing that the effect and the purpose of the law are inherently discriminatory.[187] Hence, for the take-back complaints listed above, it is not enough to show that the law actually discriminates against foreign companies. It must also be shown that the *intent* of the measure is to protect local companies.[188] Given the clear environmental goals of current take-back programs, this will be difficult to prove.

Even if an Article III or Article VI violation is found, the offending country may still avoid sanction by qualifying for the exception of Article XX(g). This exception permits measures 1) relating to conservation of 2) an exhaustible natural resource 3) if the measures similarly restrict domestic actions.[189] While one could argue that the take-back law is primarily aimed at the conservation of forests or oil (through recycling of paper

---

185 *Id.*

186 These concerns have actually been raised in formal complaints to the European Commission regarding the German Ordinance. Indeed, by May 1994, the Commission had received over 30 formal complaints against the German program. WASTE MANAGEMENT POLICY GROUP, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, EXTENDED PRODUCER RESPONSIBILITY: TAKE-BACK PROGRAMMES AND INTERNATIONAL TRADE LAW 14 (1997).

Foreign producers may face higher costs than domestic companies from having to meet different requirements in different countries (in terms of both specifications and logistics). Taken together, these added marginal costs may prove to be prohibitively expensive for small foreign producers, particularly those from developing countries. These concerns primarily stem from differences in comparative advantage and are little different for take-back programs than any other technical standards. To a large extent, these are unavoidable.

Foreign manufacturers will have little or no choice but to join large collection systems. They will generally be unable to manage take-back and valorization on their own both because they lack local contacts and because they are in a weak position to make agreements with local re-processors. If local companies manage their own closed take-back and valorization and it is cheaper than the large collection system, they will have a competitive advantage.

187 United States Taxes on Automobiles, WTO Doc. DS31/R (Sept. 29, 1994), *available in* LEXIS, Itrade Library, Gttwto File, *376-78.

188 *Id.* at *332. As the Auto Taxes Panel concluded, "'the purpose of Article III is . . . not to prevent contracting parties from using their fiscal and regulatory powers for purposes other than to afford protection to domestic production.'" *Id.* (*quoting* United States Measures Affecting Alcohol and Malt Beverages, June 19, 1992, GATT B.I.S.D. (39th Supp.) at 276 (1993).

189 *See* Canada Measures Affecting Exports of Unprocessed Herring and Salmon, Mar. 22, 1988, GATT B.I.S.D. (35th Supp.) at 114 (1989); United States Standards for Reformulated and Conventional Gasoline, WTO Doc. WT/DS2/R (Jan. 29, 1996), *available in* LEXIS, Itrade Library, Gttwto File, at *130.

or plastic), this argument will have little force unless the resources are local (i.e., the country has forests or oil wells within its borders). A stronger argument would rely on the stated policy objectives of take-back programs: reduction of solid waste and preservation of scarce landfill sites. No dispute panel has addressed whether landfill qualifies as an exhaustible natural resource under Article XX.[190] Article XX(g), however, was originally drafted for the conservation of mineral rather than living resources, so conserving landfill sites might present a reasonable argument.[191]

The last major barrier to trade posed by take-back programs, and the most problematic, occurs when the private collection system does not accept a certain type of packaging (either through outright refusal or prohibitively high fees), effectively excluding foreign producers from the market. These situations are uncommon, but act as powerful barriers. Because the collection joint ventures are private companies, the GATT disciplines presumptively do not apply. Because the standards are voluntary since one can choose whether or not to participate in the private system, the Technical Barriers to Trade (TBT) Articles do not apply.[192] In this case, the only international trade law directly applicable to the private system's packaging standards is Annex III of the TBT, the Code of Good Practice.[193]

Like GATT Article I, the Code requires equally favorable treatment to domestic and imported goods.[194] Moreover, standards cannot be prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade.[195] Defending its exclusion of certain packaging types, a private recycler would need to argue that its ban is necessary because of logistical concerns or inadequate recycling capacity for this specific type of packaging. If the challenging country could show this to be untrue, or that a simple measure could remove these concerns, then the offending country would be held responsible for bringing the private entity's standards in line with the dispute panel's holding.[196]

---

190 However, the recent appellate decision on reformulated gasoline regarded clean air as an exhaustible natural resource. United States Standards for Reformulated and Conventional Gasoline, WTO Doc. WT/DS2/R (Jan. 29, 1996), *available in* LEXIS, Itrade Library, Gttwto File, at *130.

191 Steve Charnovitz, *Exploring the Environmental Exceptions in GATT Article XX*, J. WORLD TRADE, Oct. 1991, at 46.

192 WTO Agreement, *supra* note 177, at 135.

193 *Id.* at Annex 3, *reprinted in* LAW AND PRACTICE OF THE WORLD TRADE ORGANIZATION at 158 (Joseph F. Dennin ed., 1997).

194 *Id.* ¶ D.

195 *Id.* ¶ E.

196 While the GATT appears to be irrelevant in the case of private actions, it may in fact be controlling. ARA, DSD, and Eco-Emballage are all private firms, but their existence is predicated upon state approval. One could argue that these firms operate subject to the approval of the state and, by extension, their acts qualify as government actions. Given the private collection systems' monopoly status in most take-back countries, it is not unreasonable to describe them as state-regulated monopolies. Moreover, while the collection systems' standards are voluntary, for foreign countries they really are mandatory since arranging individual take-back is prohibitively expensive.

2. Antitrust Law

A major domestic legal issue raised by implementation of national EPR take-back programs is the creation of monopolies. The economies of scale in collecting waste packaging or products become increasingly significant as the scope of collection grows. Thus, it is no coincidence that the packaging collection programs in France, Austria, Germany, Belgium, and other countries are all private national monopolies. DSD, for example, contracts individually with waste handlers and recycling facilities, and small- to medium-sized businesses left out are put under tremendous pressure to find viable markets.[197] Indeed, since 1992, more than 400 German waste handling firms have been bought out or gone bankrupt, so the business implications are very real.[198]

If federal EPR take-back laws were implemented in the U.S., given the experience to date, it is likely a national joint venture like DSD would be created by the affected industries in order to manage the collection and end-use of the packaging or products. This has already occurred in a voluntary nationwide take-back program for nickel-cadmium batteries.[199] If such a joint venture proved to be a monopoly, antitrust concerns would need to be addressed through one of four options.

The first option is a Congressional exemption to certain antitrust requirements. Federal legislation that explicitly immunizes an activity from antitrust requirements is rare and generally subjects the activity to substantial federal oversight. If introduced through federal legislation, the implementing law could include a specific antitrust exemption. Second, Congress could subject antitrust actions against certain joint ventures to a rule of reason standard rather than the per se standard. This has already been done with the National Cooperative Research Act of 1984,[200] which subjects antitrust analysis to a rule of reason and limits awards to actual damages.[201] Third, even if the enabling legislation did not contain an anti-

---

197 *Worldview Germany: Industry Demands Amendment of Packaging Law*, GREENWIRE, Jan. 4, 1995, *available in* Westlaw ALLNEWS.

198 *Id.* This squeezing out of small and medium-sized firms occurred during a period of rapid growth in the waste disposal industry. German authorities were well aware of the problem, yet the Federal Cartel Office initially turned a blind eye in order to lift the program off the ground. *Federal Cartel Office Took Steps to Break Up Plastic Recycling Monopoly*, Int'l Env't Daily (BNA) (Apr. 8, 1994), *available in* LEXIS, BNA Library, Bnaenvr File. Since 1993, however, the Office has limited DSD's expansion and ordered it to shorten its contracts with plastics recyclers from ten years to two years. *Id.*

199 Jefferson Bagby, Rechargeable Battery Recycling Corporation, Remarks at the President's Committee on Sustainable Development Workshop on Extended Producer Responsibility (Oct. 20, 1996). The Rechargeable Battery Recycling Corporation's national collection program is funded by over 200 companies that manufacture rechargeable products for sale in North America. *Id.* Outside of Minnesota and New Jersey, the take-back program is voluntary. *Id.*

200 15 U.S.C. §§ 4301-4304, 4302 (1994).

201 *See* HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE 189 (1994); Thomas A. Piraino, *Beyond Per Se, Rule of Reason or Merger Analysis: A New Antitrust Standard for Joint Ventures*, 76 MINN. L. REV. 1, 20-21 (1991). The rule of reason analysis for a joint venture considers the purpose of the venture, industry structure

trust exemption, some commentators argue that precedent could provide a shield if the collection joint venture was the least-drastic means to achieve the policy goal, entry to the joint venture was not exclusive, and the joint venture could be made smaller to encourage competition and lower entry barriers.[202] A key issue in this analysis is the likelihood of price-fixing by the joint venture.

If introduced at the state level, the state action doctrine could exempt state industries from federal antitrust enforcement if the statute clearly articulated a policy to displace competition and the policy was actively supervised by state agents.[203] Courts have occasionally permitted local governments to identify sole providers for a variety of public services (for example, monopoly waste management contracts) where the public interest mandates a monopoly provider.[204] In general, however, state action immunity is a very restrictive doctrine.

Finally, given the fate of the many small- and medium-sized German waste handlers who went out of business, it might be appropriate not to provide any antitrust protection at all. This would encourage competitive collection operations at the regional or national level.

3. Hazardous Waste Management

The other major issue confronting any take-back program in the United States will be RCRA's regulation of hazardous waste in Subtitle C.[205] Indeed, RCRA's requirements already pose obstacles to a number of collection and recycling systems. Unless items are sorted directly out of the municipal waste stream, any take-back program must rely on items

---

and the competitive position of participants, scope and duration of the venture, impact on outside competitors, and efficiencies and other justifications. *See* U.S. Dept. of Justice, Antitrust Division, Antitrust Guide for International Operations, 53 Fed. Reg. 21,584 (1988).

[202] *See* HOVENKAMP, *supra* note 201, at 232-40.

[203] *See* Goldfarb v. Virginia State Bar, 421 U.S. 773, 778-92 (1975) (holding that minimum fee schedule published by county bar association and enforced by state bar constituted antitrust activity as there was no state statute requiring such anticompetitive activity); California Retail Liquor Dealers Ass'n v. Midcal Aluminum, 445 U.S. 97, 105 (1980) (holding that California system for wine price maintenance was not exempt from antitrust laws because although legislative policy was clear in its purpose to allow resale price maintenance, the state's control of system only amounted to authorization of price setting and enforcement of prices fixed by private parties); Southern Motor Carriers Rate Conference v. United States, 471 U.S. 48, 57 (1985) (citing *Midcal* and holding that collective rate making among four rate bureaus did not violate antitrust laws because state expressly permitted policy of ratemaking and state public service commission actively supervised).

[204] *See* Town of Hallie v. City of Eau Claire, 471 U.S. 34 (1985) (upholding a state-authorized exemption to a municipality for monopolizing sewage and transport services); L&H Sanitation, Inc. v. Lake City Sanitation, Inc., 769 F.2d 517 (8th Cir. 1985) (holding that municipalities have broad regulatory authority to enter into contracts with exclusive private parties to provide solid waste management and disposal services); Scott Makar, *Local Government, Privatization, and Antitrust Immunity*, 68 FLA. BAR J. 38, 40-41 (1994) (providing examples of where a local government, acting pursuant to clear state polices, exclusively contracted with a private party for provision of services such as solid waste management, and the local government's supervision of the party was deemed sufficient).

[205] 42 U.S.C. §§ 6921-6939(e) (1994).

collected at retailers or sorting centers before consolidation and bulk shipment to recycling or remanufacturing plants. If, however, the collected items contain RCRA hazardous constituents such as heavy metals or other RCRA characteristic wastes which may make them a hazardous waste, the collection centers risk becoming classified as a Treatment, Storage or Disposal facility (TSD) and subject to RCRA Subtitle C reporting, certification, and administrative requirements.[206] Both the cost of compliance and RCRA's penalty provisions, including civil and criminal sanctions, provide strong disincentives to the creation of a collection network.[207]

EPA is fully aware of this problem and has promulgated a Universal Waste Rule which relaxes RCRA Subtitle C requirements for collection and transportation of certain hazardous wastes.[208] In particular, the rule focuses on significant volumes of common hazardous wastes produced in a wide variety of settings such as small businesses, commercial facilities, and households that, if not collected, would otherwise end up in the municipal waste stream.[209]

The Universal Waste Rule, however, has not solved the problem of large-scale collection. Because the Rule relaxes Subtitle C requirements, it must be adopted for each waste stream by state legislatures or agencies which have been delegated RCRA enforcement authority.[210] Thus, companies attempting to implement a national collection program for a hazardous waste stream other than batteries, certain pesticides, or mercury-containing thermostats must petition the EPA and each state individually to add this waste stream to the list of universal wastes. This is a time-consuming process which may stall implementation of take-back systems. To date, nearly 30 states have adopted the Universal Waste Rule.[211]

The first attempt to apply the Universal Waste Rule to new waste streams involved nickel-cadmium batteries. After first attempting to persuade states to adopt nickel-cadmium batteries as a universal waste, the Portable Rechargeable Battery Association, a trade group consisting of

---

206 42 U.S.C. § 6924 (1994). If the product is being collected for recycling or disposal it is considered a Subtitle C waste. If, however, it is being sent for repair only, then it may be regarded as a product outside of RCRA Subtitle C's reach. Personal Communication with Gail Cooper, EPA Office of Solid Waste (Dec. 4, 1996).

207 42 U.S.C. § 6928(g) (1994).

208 40 C.F.R. pt. 273 (1997).

209 Promulgated in 1995, the Universal Waste Rule was designed to address batteries, certain pesticides, and mercury-containing thermostats, as well as create a management regime for the collection of other common wastes. *Id.* The Universal Waste Rule allows citizens to submit a petition to the EPA requesting the classification of a waste as a universal waste if it meets the certain criteria listed in the rule. 40 C.F.R. pt. 273.80 (1997). Collection sites that do not accumulate over 5,000 kilograms of universal waste at any one time are exempted from RCRA's reporting requirements and have minimal worker training and storage requirements. 40 C.F.R. pt. 273.32 (1997). Sites that accumulate over 5,000 kilograms incur some RCRA obligations, but significantly less than full Subtitle C requirements. 40 C.F.R. pt. 273.32 (1997).

210 Gretchen N. Smith, Note, *The Universal Waste Rule: Modification of the Hazardous Waste Recycling Program*, 2 ENVTL. LAW. 203, 216 (1995).

211 Mary Greczyn, EPA Studies Battery Plans, WASTE NEWS, July 21, 1997, *available in* 1997 WL 8330283.

manufacturers of portable rechargeable batteries, and battery producers and original equipment manufacturers whose products contain rechargeable batteries formed the Rechargeable Battery Recycling Corporation to develop the framework for a nationwide special collection system.[212] The Corporation lobbied both the EPA directly and individual members of Congress to adopt a final rule which, among other things, would require all states to allow collection of nickel-cadmium batteries as a universal waste stream, thus, excluding nickel-cadmium battery collection for recycling from many of RCRA's requirements.[213] Eventually, Congress stepped in and passed the Mercury-Containing and Rechargeable Battery Act of 1996.[214] Absent states' approval of other waste streams as universal waste, it is likely other product categories containing RCRA hazardous waste materials will also need to seek national legislation.

C. Political Adoption

Beyond the legal and policy issues, the final important question regarding EPR initiatives such as take-back is whether we will see them in the United States in the form of laws or broad-based voluntary programs. There are three strong reasons why EPR programs will grow in the United States, and within the decade.

First of all, EPR programs are attractive to government because they shift environmental management expenses from the public purse to the private sector. With packaging and product take-back laws, for example, waste management costs are borne by the private sector and financed through product prices rather than local taxation. In an era of continuous budget reductions, this is an attractive feature for local governments. Indeed, it is not surprising that the U.S. Conference of Mayors has specifically endorsed the adoption of take-back laws.[215]

Second, we already have related precedents in American law. Advanced disposal fees, a weak form of EPR described in Part II, are on the

---

[212] *See* Lynn L. Bergeson, *EPA in No Hurry to Ease Recycling for Secondary Markets Despite Promises, Product Stewardship Difficult to Accomplish*, CORPORATE LEGAL TIMES, Dec. 1994, *available in* Westlaw ALLNEWS.

[213] *Id.*

[214] The Mercury-Containing and Rechargeable Battery Act of 1996, Pub. L. No. 104-142, 110 Stat. 1329 (to be codified at 42 U.S.C. §§ 14,300-14,336).

[215] In 1994, the U.S. Conference of Mayors adopted a resolution supporting packaging take-back. Called the "Share Responsibility for Waste Reduction Resolution," it called on the Clinton Administration and Congress to study implementation of a program which would require companies to take-back and reuse, or recycle, transit and product packaging. Noting the high costs borne by cities and local governments to recycle and dispose of solid waste, the resolution stated that "'manufacturers, distributors, shippers and retailers have no solid-waste-management incentives to minimize package and shipping waste and, as a result, taxpayers must pay for the disposal of this waste.'" U.S. CONFERENCE OF MAYORS, SHARE RESPONSIBILITY FOR WASTE REDUCTION RESOLUTION, *quoted in* Richard A. Zuck, *Manufacturer's Responsibility System Sought by US Mayors*, PAPER, FILM & FOIL CONVERTER, Sept. 1994, at 128, *available in* 1994 WL 13501815; *see also Mayors Call for More Participation by Industry to Share Increasing Costs*, Nat'l Env't Daily (BNA) (Nov. 8, 1994), *available in* LEXIS, BNA Library, BNAEVR File.

books in over half the states.[216] Mandated for lead-acid batteries, tires, and motor oil, the products' disposal costs are set at a fixed level and included in the price. At the federal level, a 1992 bill reauthorizing RCRA created EPR take-back obligations for packaging.[217] While gathering enough support to be voted out of committee, the bill was never voted on by the full Senate.[218]

Finally, and most importantly, many companies already voluntarily practice EPR in America and have done so for years. Xerox recovers its photocopiers, reconditions them, and puts them back in the market.[219] Ford collects and reconditions its bumpers.[220] Dupont takes back its films

---

216 *See supra* note 19 and accompanying text.

217 *See* S. REP. No. 103-33, at 11 (1993).

218 *Id.* Sponsored by Senator Max Baucus (D-Mont.), Senate Bill 976 required major producers and importers to achieve minimum targets for certain paper products, glass, aluminum, and plastic packaging. Lifset, *supra* note 103, at 42. They were permitted to satisfy their obligations by taking back and recycling their own materials, ensuring others did this on their behalf, lightweighting the product or packaging, or producing re-usable products and packaging. *Id.* at 43.

More relevant is the federal treatment of rechargeable nickel-cadmium batteries. To manage the toxic heavy metal, cadmium, in the municipal solid waste stream, Minnesota and New Jersey passed laws requiring industry sponsored collection programs. MINN. STAT. ANN. § 115A.9155 (West 1993); N.J. STAT. ANN. § 13:1E-99.60 (West 1996). Concerned over take-back laws varying from state-to-state, the battery industry lobbied Congress for uniform federal legislation. In 1996, Congress passed a law relieving battery recycling activities from many of RCRA's hazardous waste transport and manifest requirements. Rechargeable Battery Recycling Act, Pub. L. No. 104-142, § 102-104, 110 Stat. 1332 (1996) (to be codified at 42 U.S.C. §§ 14321-14323). The battery industry has launched a national take-back program which aims to achieve 70% recycling by the year 2000. If successful, the program will obviate the need for other states to pass take-back laws. Indeed, if take-back follows the path of battery recycling, packaging bans, or bottle bills, it is likely state initiatives will be necessary to prompt any federal action.

219 Jack Azar, Associate Director of Environmental Products & Technology, Xerox Corporation, Remarks at the EPA Workshop on Extended Product Responsibility (Oct. 22, 1996). In 1991, Xerox established a program called Asset Recycling Management to eliminate the disposal to landfill of its products. *Id.* In designing waste-free products, Xerox relies on global product designs incorporating recycled and recyclable materials, snap-together fittings for assembly and disassembly, and coded plastic parts. *Id.* Copying machines and over 65% of copy cartridges sold are retrieved from users and re-manufactured for sale. *Id.* Annual savings from re-manufacturing are estimated at over $200 million annually. *Id.*

220 Anthony Brooks & Michael Patalan, Ford Motor Company, Remarks at the EPA Workshop on Extended Product Responsibility (Oct. 22, 1996). Working with a plastics recycler and over 400 car dismantlers across the country, Ford has instituted a nationwide network to supply its take-back program for bumpers. *Id.* Collecting Ford car bumpers from dismantlers (by paying $4 per bumper), a plastics recycler converts the bumpers into resin pellets which are used as feedstock in the manufacture of new Ford auto parts. *Id.* The recycled plastic is 25% to 30% less expensive than virgin resin, resulting in savings to Ford of over $1 million per year. *Id.*

and chemically breaks them down for reuse as raw material.[221] While not well known, there are many other examples.[222]

The driving force behind these initiatives are three-fold. In many cases, as with Xerox, it is good business practice and saves the company money through reduced material and manufacturing costs. Second, as described above in the case of rechargeable batteries, voluntary take-back may pre-empt state legislation. Third, as companies' markets become increasingly international they develop global designs to realize economies of scale. Europe's take-back requirements for durable and complex products necessitates product design optimized for re-use and recycling. Yet, multinationals will sell many of these same products in the American market. If the EPR initiatives make economic sense in Europe, they likely will make money in the U.S. as well, driving even more voluntary take-back initiatives and perhaps mandatory laws.

The most compelling example of EPR's potential, however, comes from the poster child of the throw-away society, the disposable camera. Despite its name, the camera is not thrown away. Instead, Kodak and Fuji pay developing labs to send cameras back to the appropriate factory

---

221 Remarks of Lee Jannaman, Jr., DuPont Films, EPA Workshop on Extended Product Responsibility (Oct. 22, 1996). With a public goal of eliminating entirely the disposal of PET film such as video cassettes and X-ray film in landfill, DuPont has developed a technology which breaks down waste film for recycling into new PET film. *Id.* In partnership with the Association of Manufacturers of Polyester Film, the International Recording Media Association, and other trade groups, DuPont is establishing collection networks to gather up to 100 million pounds of waste PET film for recycling. *Id.* Through a collection network with hospitals and government agencies, DuPont already recovers 20 million pounds of used X-rays annually for re-processing. *Id.*

222 Companies often describe such initiatives as "product stewardship." Olivetti has entered into a service agreement with Aurora Electronics to take-back its computer systems. *Aurora Electronics to Manage Product Takeback for Olivetti Computer Systems*, BUS. & THE ENV'T, Mar. 1994, *available in* 1994 WL 2504979. After paying Aurora, Olivetti estimates it will save $2,500,000 annually. *Id.* New Jersey Bell takes back old telephones and answering machines and gives its customers a $10 discount on ordering a new automated answering service in exchange. *New Jersey Bell Recycles Telephone Equipment Swapped for New Service*, BUS. & THE ENV'T, June 1993, *available in* 1993 WL 2736177. Sun Microsystems, IBM, and DEC all offer optional take-back programs for their computers. Electronic Product Recovery & Recycling Conference (Washington D.C., Feb. 25-26, 1997). Most of the collected components are disassembled and sold to service centers as spare parts. *Id.* BASF takes back certain of its carpets after their useful life and recycles the nylon into new products. *Next-Generation Environmental Management: What Will It Look Like?*, BUS. & THE ENV'T, Apr. 1994, *available* at 1994 WL 2504960. The furniture company, Armstrong, takes back the Microfoam polypropylene-foam sheeting scrap that encases its furniture. *Recycling Pays Off for Armstrong*, PACKAGING, Nov. 1994, *available in* 1994 WL 2907799.

The EPA's Common Sense Initiative has proposed voluntary pilot take-back programs for electronics in Somerville, Massachusetts, and Binghamton, New York. Davis, *supra* note 146. In Union County, New Jersey, Digital Equipment Corporation is working with the county government to collect, disassemble, and, where possible, re-use or recycle components of high value, end-of-life electronics such as televisions, microwaves, VCRs, computers, and stereos. *Id.* at 28-29. Electronic products such as Sony Walkmans and other electronic toys are not accepted as they have little end-of-life value. *Id.* at 29, 45.

where they are reconditioned and placed back on the market.[223] If this symbol of our disposable society can become the model for reuse, then clearly there is hope for adoption of EPR programs in America.[224]

VII. CONCLUSION

Extended Producer Responsibility (EPR) take-back policies provide an innovative legal instrument to reduce the environmental impacts of consumption with significant market consequences. This is not surprising, however, for over the last decade, consumption-related laws have been quietly driving an industrial transformation. As recycled content in paper becomes a legal mandate and a procurement requirement, paper mills are moving closer to their raw material source–the urban forest rather than the natural forest of yesterday. As waste handlers forge closer links to producers, they are becoming an important source of raw materials.[225] In a telling statistic, Waste Management, one of the largest waste firms in the world, in 1995 for the first time had *more* people working in recycling facilities than in landfills.[226] As markets evolve and new institutional links develop, companies are taking seriously what happens to their products when they become waste. That simply would not have happened ten or, in many cases, even five years ago.

Achievement of sustainable consumption cannot be reached through take-back and EPR policies alone. Elimination of extraction subsidies, more accurate pricing mechanisms, education, and other actions will be necessary to address the impacts of consumption in sectors such as energy, agriculture, and transportation. Entirely new approaches will be needed to address the issue of levels of consumption. Nonetheless, EPR does represent a radical break from the traditional focus on production facilities and provides a promising model for future laws. Indeed, the role of consumption in promoting environmental protection is too important to

---

223 *Kodak and Fuji Reach Agreement on Recycling Single-Use Cameras*, BUS. & THE ENV'T, Mar. 1995, *available* at 1995 WL 8380347. Kodak claims the cameras are re-used up to six times.

224 Despite their power, take-back laws are only one facet of EPR. In the coming years, both voluntary and mandatory EPR initiatives will continue to expand the responsibility of actors throughout the product's life-cycle, creating new partnerships and altering traditional economic ties. Basic questions will need to be answered. What kind of responsibility should be extended: legal, physical, or economic? How far in the product life-cycle should it be extended? In which sectors does EPR make economic and environmental sense?

225 Fuller et al., *supra* note 131, at 56. Take-back laws are one force driving this market development. "By serving to close the loop of the materials cycle, reverse channels make available competitive, nontraditional sources of raw materials in a market economy that has been designed around and is dependent upon virgin sources." *Id.*

This shift is also evident in the energy sector, where demand-side management has moved utilities from the business of selling energy to the provision of energy services. *See* Ellyn R. Weiss & James Salzman, *The Greening of American Energy Policy*, 63 ST. JOHN'S L. REV. 691, 698-704 (1989).

226 Edward Skernolis, Waste Management, Remarks at the President's Council on Sustainable Development Workshop on Extended Producer Responsibility (Oct. 20, 1996). The company is re-defining its mission, targeting more future revenue growth from materials management than from waste disposal. *Id.*

ignore, and will likely play a key role in guiding the law's development into the 21st century.